

MANUFACTURERS' RECORD

A Southern

Industrial, Railroad and Financial

Newspaper.

VOL. XVI. NO. 15. WEEKLY.

BALTIMORE, NOVEMBER 16, 1889.

\$4.00 A YEAR.
SINGLE COPIES, 10 CENTS.



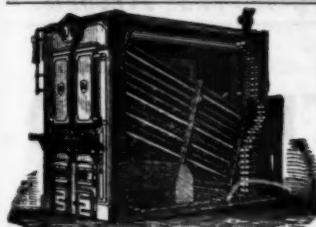
Milling Outfits for Flour and Meal.

WE MAKE ROLLS AND PORTABLE MILLS COMPLETE.

Manufactory Established in 1851.

Pamphlets with Prices Mailed Free.

NORDYKE & MARMON CO., INDIANAPOLIS, IND.



ROOT'S NEW WATER TUBE STEAM BOILER,

Safe, Economical, Durable.

Recently adopted by the BRUSH ELECTRIC LIGHT CO., at Louisville, the EDISON ELECTRIC LIGHT CO., Detroit, and the COLUMBUS EDISON ELECTRIC LIGHT CO., Columbus, Ohio.

Abendroth & Root Manufacturing Co.
28 CLIFF STREET, - - - - - NEW YORK.

SELLING AGENTS:

CHAS. B. ASHCROFT, Esq., 5 Mason Building, Boston, Mass.
V. MERRILL, 140 N. Third Street, Philadelphia, Pa.
SMITH & KNAPP, 91 S. Canal Street, Chicago, Ill.
JOHN S. MOORE, 109 Gravier Street, New Orleans, La.
MORTON, REED & CO., Baltimore, Md.

ELEVATORS

MORSE ELEVATOR WORKS. MORSE, WILLIAMS & CO.

Manufacturers and Builders of HYDRAULIC STEAM, BELT and HAND-POWER PASSENGER and FREIGHT ELEVATORS. With most approved Safety Devices. Dumb-Waiters, Automatic Hatch-Doors, &c.

Office, 1105 FRANKPORT AVE.; Works, FRANKPORT AVE., WILDEY and SHACKAMAKON STREET, PHILADELPHIA, PA.

Branch Office, 108 Liberty St., New York. MORTON, REED & CO., 3 & 5 German St., Agents for Baltimore.

Boston Office, 14 High St.

SPECIAL NOTICE.

We have just issued a Catalogue and Price List of Mining, Tunneling and Quarrying Machinery. This Catalogue will be MAILED FREE TO CONTRACTORS, ENGINEERS, AND TO ANY ONE ENGAGED OR INTERESTED IN ROCK EXCAVATION OR AIR COMPRESSION. To all other persons it will be sent on receipt of 50 cents in postage stamps.

INGERSOLL-SERGEANT ROCK DRILL COMPANY,
10 Park Place, New York.



THOS. K. CAREY & BROS. Agents for the Dodge INDEPENDENCE Patent Wood Split Pulleys.

Machinery, Mill and Railroad Supplies.

26 Light Street, Baltimore, Md.

Carrying Car-Load Lots of Assorted Sizes in their Warehouse in Baltimore.

WRITE FOR PRICE-LISTS AND DISCOUNT.



The Milburn Patent Wood Split Pulleys are the Best in the World.

Cotton Gins, Engines and "Self Packing" Hydraulic Presses, Boilers, Gins, Feeders and Condensers.

Write for Illustrated Catalogue and Price List.

MILBURN GIN & MACHINE CO., MEMPHIS, TENN.



25 to 60 per cent. more power with same belt
LIGHT, STRONG AND CONVENIENT.

Every One Guaranteed.

LEONARD & McGOW, Agents, 111 Liberty Street, New York.

SMITH & COURTNEY, Agents, Richmond, Va.

E. VAN WINKLE GIN & MACHINERY CO., Atlanta, Ga.



STEEL RAILS,
(ALL WEIGHTS)
FIG IRON,
IRON ORE,
SCRAP.

ROBINSON & ORR, PITTSBURGH, PA.

Steel Rails and Fastenings.
68 & 70 S. CANAL ST.
CHICAGO, ILL.

WE BUY
OLD IRON AND
STEEL RAILS,
(for reworking
or relaying.)
WRITE US.

FRANK W. SWETT, MANUFACTURER OF BAND SAWS,

Every Blade Warranted.

The Sawyer-Man Electric Co.

(Leased to the WESTINGHOUSE ELECTRIC COMPANY)

510 W. 23d Street, New York.

INCANDESCENT ELECTRIC LAMPS,
Supplies for Electric Lighting,
Electric and Combination Fixtures.

CORRESPONDENCE WITH DEALERS INVITED.

Daft Electric Light Company,
115 BROADWAY, N. Y.

ELECTRIC RAILWAYS,
POWER STATIONS,
Stationary Electric Motors.

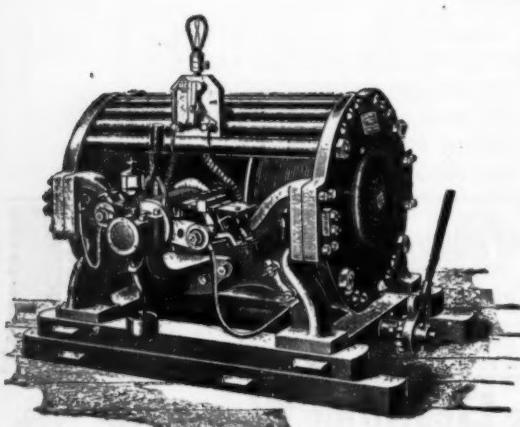
PLEASE MENTION MANUFACTURERS' RECORD.

The Thomson-Houston Electric Co.
MANUFACTURER AND CONTRACTOR

FOR THE

INSTALLATION OF

Incandescent Lighting Plants.



The Thomson-Houston Dynamos are automatic in regulation under all changes in load. Any decrease in the number of lamps burning is followed by a corresponding decrease in the amount of power required by the dynamo.

The lamps, under repeated tests, have burned two and three times their guaranteed life without any blackening of the bulb or diminution of the candle power.

ESTIMATES FURNISHED FOR COMPLETE INSTALLATIONS

For Central Stations, Mills, Factories and Public Buildings.

The THOMSON-HOUSTON ELECTRIC CO.

620 Atlantic Avenue, BOSTON, MASS.
 WALL AND LOYD STREETS, ATLANTA, GA.

148 Michigan Avenue, CHICAGO, ILL.
 215 West Fourth Street, Cincinnati, O.

RIEHLE'S TESTING MACHINES & SCALES.

RIEHLE BROS., Store, 13 Market
 St. Works 9th above Master, Phila.
 New York Store, 10 Liberty St.

THE HEISLER PATENT Long Distance Incandescent Electric Light System.

UNEQUALLED FOR DISTRIBUTION OVER WIDE AREAS.



Heisler Electric Light Company,
 809 to 817 South Seventh Street, ST. LOUIS, MO.
 "Awarded the Highest Distinction—a Gold Medal—by the International Jury at the Universal Exposition, Paris, 1889."

Electric Power.

A Monthly Journal devoted to the interests of the Electric Railway and the Transmission of Power by Electricity for Industrial purposes.

The only Journal in the world devoted exclusively to transmission of power.

Its circulation embraces Electrical, Mechanical, Mining, Hydraulic and Civil Engineers, and Officers and Employees of Street and Electrical Railways. Send for sample copy.

ELECTRIC POWER PUBLISHING CO.
 132 Nassau, Cor. Beekman St., New York.

Subscribe to the Manufacturers' Record.



Hoisting Engines for Mines, Furnace & Factory



Hoisting • Machinery

FOR

CONTRACTORS,

Bridges, Dock Building, Pile Driving and Excavating.

300 STYLES AND SIZES.
OVER 6,000 IN USE.

AGENTS:
MORTON, REED & CO., Baltimore, Md.
MILNER & KETTIG, Birmingham, Ala.
MOSES P. JOHNSON, St. Louis, Mo.

• MINE •

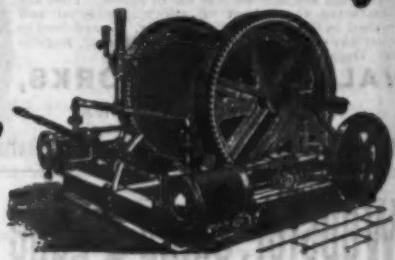
AND

FURNACE HOISTS,

Horizontal Engines

FOR MANUFACTURING.

New Catalogue for 1889 now ready.



LIDGERWOOD MFG. CO.

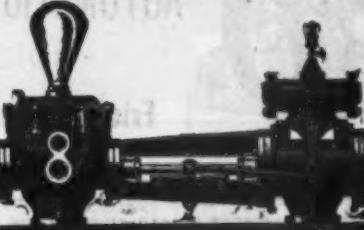
98 LIBERTY STREET, NEW YORK.
34 & 36 WEST MONROE STREET, CHICAGO.
107 TO 203 CONGRESS STREET, BOSTON.



H. A. ROGERS, 19 John Street,
NEW YORK.
RAILWAY
AND
Machinists' Supplies.
SOLE AGENTS IN THE U. S. FOR
Monrovia's Scotch Gauge Glass.
GENERAL AGENT CELEBRATED TANITE EMERY WHEELS.

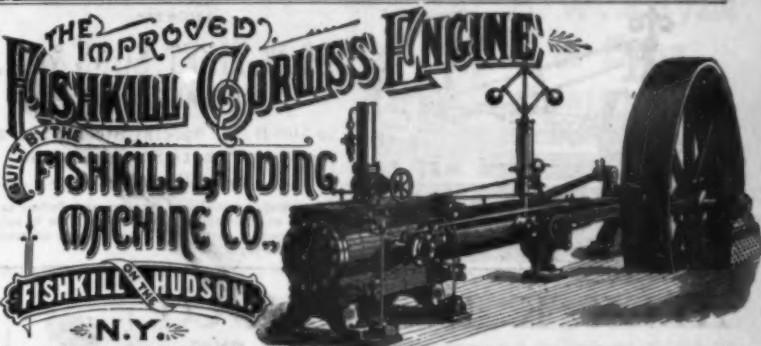
The M. T. DAVIDSON STEAM PUMP.

Simple,
EFFICIENT,
Reliable,
FOR ALL
PURPOSES
AND
DUTIES.



MADE IN
ALL SIZES,
WHETHER
SINGLE OR
Duplex.
ALSO
COMPOUND
Pumping
ENGINES.

DAVIDSON STEAM PUMP CO., 77 Liberty St., NEW YORK.



AMERICAN SUPPLY COMPANY,

Formerly Myron Fish & Co., of Valley Falls, R. I., and Kendrick Loom Harness Co., of Providence, R. I.

—MANUFACTURERS OF—

LOOM HARNESS AND REEDS.

Oak Belting, Lace and Picker Leather, and Dealers in Supplies for Cotton, Woolen and Silk Mills.

Agents for Joseph McNamee's Sons'

Roller, Slasher & Clearing Cloths.

RODDICK'S PATENT IMPROVED OIL CANS.
Agents for—



WE HAVE
Unequalled Facilities for Furnishing
Shuttleless Heddle Frames,
WIRE HEDDLES & WIRE GOODS
Of all Descriptions.

WE HAVE
Unequalled Facilities for Furnishing

Special Notice to Worsted and Silk Mills.

We Manufacture both Worsted and Cotton Machine-Knit Mail Harness for Weaving Fine Worsted and Silk Goods. Also a Full Line of Supplies for Jacquard Looms.

Office and Salesrooms, 10 Exchange Place, Providence, R. I. —FACTORIES:— PROVIDENCE and VALLEY FALLS, R. I.

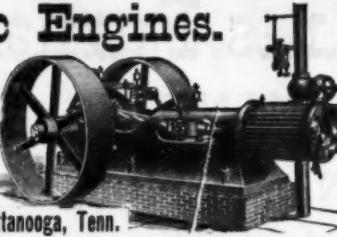
A. D. LOCKWOOD, Pres. JOHN KENDRICK, Vice-Pres. MYRON FISH, Treas. JOHN A. CARTER, Secy. JOSEPH H. KENDRICK, Mgr't Ass't.

Valley Automatic Engines.

Applicable to any and all uses requiring Close Regulation and Economical use of Steam. They are constructed throughout of selected material and finished in the best possible manner. Guaranteed to equal any of their class extant in Economy, Regulation, Durability and General Efficiency.

VALLEY IRON WORKS,
MANUFACTURERS,
WILLIAMSPORT, PENNA.

WM. H. BRUNDIGE & CO., Sales Agents, Chattanooga, Tenn.

**Webster, Camp & Lane Machine Company,**

AKRON, OHIO.

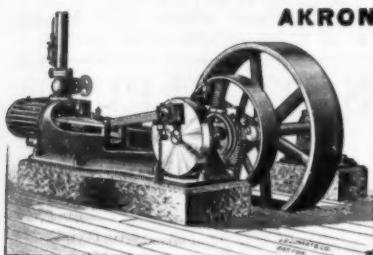
BUILDERS OF

AUTOMATIC ENGINES,

— BOILERS,—

Friction Clutch Pulleys,

COMPLETE POWER PLANTS.



Write for Circulars.

**) FOR THE LOWEST-PRICED FIRST-CLASS (—
ENGINES & BOILERS**

ADDRESS

GEO. W. TIFFT, SONS & CO.
BUFFALO, N. Y.

5 to 500 H. P. Special Stock Sizes &
to 50 H. P., b. t. Stationary and
Semi-Portable.

A few good Second-Hand Engines and Boilers are
for sale at an astonishingly low figure. Must be sold
to make room for sto Correspondence solicited
Mention this paper.

ALEX. K. RARIG & CO.

COLUMBUS, OHIO.

MANUFACTURERS OF
Blast Furnace Plants,
AUTOMATIC CUT-OFF ENGINES,
HOISTING ENGINES,
Boilers, Boiler Plate Punches,
ROLLS AND SHEARS,
Clay-Working Machinery,
Steam Sewer Pipe Presses.



Socket Pipe, Tile and Fire-Proof Dies, Wet and Dry Pans for Grinding and Tempering Clay for Sewer Pipe, Terra Cotta, Brick and Tile. We furnish complete outfits for Sewer Pipe and Brick Plants. Write for catalogue. Correspondence solicited. Mention this paper.

SKINNER ENGINE CO., ERIE, PA.

MANUFACTURERS OF PORTABLE AND STATIONARY

**ENGINES AND
BOILERS**

OVER 3400 IN USE.

SEND FOR CATALOGUE.

MORTON, REED & CO., AGENTS, BALTIMORE, MD.
NEW YORK and NEW ENGLAND OFFICE, C. R. VINCENT & CO., 15 Cortlandt St., N. Y.

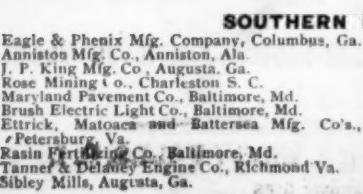
JARVIS Patent FURNACE

For Setting Steam Boilers.

Economy of Fuel, with increased capacity of Steam Power. Like the Siemens Process of Making Steel, it utilizes the waste gasses with hot air on top of the fire. Will burn all kinds of waste fuel without a blast, including Slack Coal, Sawdust, Logwood Chips, &c. Send for Circulars.

JARVIS ENGINEERING CO.

J. N. PRATT, Treas. and Gen'l Manager.
61 Oliver Street, BOSTON, MASS.

**SOUTHERN REFERENCES:**

Eagle & Phenix Mfg. Company, Columbus, Ga.
Anniston Mfg. Co., Anniston, Ala.
J. P. King Mfg. Co., Augusta, Ga.
Rose Mining Co., Charleston, S. C.
Maryland Pavement Co., Baltimore, Md.
Brush Electric Light Co., Baltimore, Md.
Ettrick, Matawan and Battersea Mfg. Co's.,
Petersburg, Va.
Rasin Fertilizing Co., Baltimore, Md.
Tanner & Delaney Engine Co., Richmond, Va.
Sibley Mills, Augusta, Ga.

Graniteville Mfg. Co., Graniteville, S. C.
Charleston Bagging Co., Charleston, S. C.
P. H. Mayo & Bros., Richmond, Va.
Phosphate Mining Co., Beaufort, S. C.
Brus Swan Electric Light Co., Norfolk, Va.
Columbus Ice & Refrigerator Co., Columbus,
Ga.
Lenoir Manufacturing Co., Lenoir, East Tennessee.
Vanceuse Mill, Graniteville, S. C.
Charleston Electric Light Co., Charleston, S. C.

Southwark Foundry & Machine Company

Philadelphia, Penna.

BOILERS.

TANKS.

STEAM

HAMMERS.

HEAVY

CASTINGS.



BLOWING AND
REVERSING
ENGINES.
CENTRIFUGAL
PUMPS.
STEAM PUMPS.

SOLE MAKERS OF
PORTER-ALLEN AUTOMATIC ENGINE.
HIGH ECONOMY. DURABILITY. CLOSE REGULATION.

ECLIPSE CORLISS ENGINES.

**Frick Company, Engineers, Builders,
WAYNESBORO, PA.—**

40 to 1,000 H. P.
Made.

Condensing, Non-Condensing & Compound.
Send for Corliss Circular.

Ice-Making and
Refrigerating
Machinery.
Send or Ice-Machine
Circular.

Special Automatic Electric Light Engines, Steam Boilers, Traction and Portable Engines, Saw Mills. Send for our General Catalogue.

The Beckett Foundry & Machine Co.

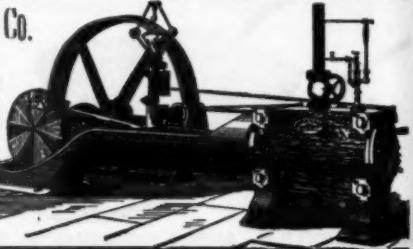
ARLINGTON, N. J.

MANUFACTURERS OF THE

"Munzer" Corliss Engine.

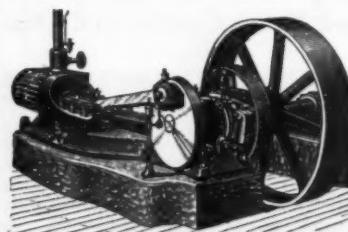
Also Plain Slide Valve Engines,
Mining and Milling Machinery and
Mine Hoists.

SEND FOR CATALOGUE.

**Acme Automatic Engine,
With BRYANT'S Patent Safety Boiler.**

Sizes 1, 2 and 4 H. P. Fuel, Kerosene (Coal) Oil, 110° to 120° fire test. No dust, ashes, or smoke. No Skilled Engineer required. "Brake" Tests show that 3/4 gals. fuel will deliver a full H. P. on belt for 20 hours, in the case of our 1 H. P. Engine and Boiler.

**Rochester Machine Tool Works,
BUILDERS, ROCHESTER, N. Y.**
SEND FOR CATALOGUE.



Russell & Co.
MASSILLION, OHIO.

BUILDERS OF
**Automatic Engines,
BOILERS, ETC.**

Complete Power Plants Furnished.

SOUTHERN AGENCIES:
CAMPBELL, ZELL & CO., Baltimore, Md.
RUSSELL & CO., 75 S. For-yte St., Atlanta, Ga.

Strong, Well Built, Serviceable
12 TO 80
Horse Power.

STEAM ENGINES
Adapted to Heavy, Continuous Work. Every Engine tested under full load. For descriptive circulars, address

Chandler & Taylor, Indianapolis, Ind.

ESTABLISHED 1854.
Wm. A. HARRIS STEAM ENGINE CO.
(Successors to Wm. A. Harris.)
PROVIDENCE, R. I.

Builders of **HARRIS-CORLISS ENGINES,**

FROM 20 TO 2,000 HORSE POWER.

These Engines are carefully built of best materials and in different forms, such as Non-Condensing Condensing and Compound Condensing. Send for copy of **ENGINEERS AND STEAM USERS' MANUAL**, by J. W. Hill, M. E. \$1.25. Mention this paper and send for catalogue. WM. A. HARRIS, Pres't. & Treas.

The D. A. TOMPKINS CO., CHARLOTTE, N. C. Southern Agents.

C. D. MACDOUGALL, Pres't. & Treas. A. E. SLOCUM, Vice-Pres't. E. B. MOSHER, Sec'y.
The BIRDSALL COMPANY,
OF AUBURN, N. Y.

Stationary, Automatic, Portable and Traction Engines, Return, Tubular, Locomotive and Steam Heating Boilers, Radiators, Portable Saw and Grist Mills, Shingle Machines, Threshers, Fruit Evaporators, etc., etc.
Branch House, 203 North Street, Horn Building, Fall River, Md.

FRED. J. MOSHER, Manager.

COMPOUND. CONDENSING OR NON-CONDENSING.
16 Sizes, 5 to 500 H. P. Not yet equaled by any form of Engine for HIGH FUEL DUTY AND SIMPLICITY.

STANDARD. 13 Sizes in Stock. 5 to 250 H. P.
3,000 in use in all parts of the Civilized World.

JUNIOR. 6 Sizes in Stock, 5 to 50 H. P.
AN AUTOMATIC ENGINE CHEAPER THAN A SLIDE VALVE.
Well Built. Economical. Reliable. Over 300 sold the first year.
All the above built strictly to Gauge with Interchangeable Parts.
Repairs Carried in Stock. Send for Illustrated Catalogues.

WESTINGHOUSE ENGINES

The Westinghouse Machine Co.
PITTSBURGH, PA. U.S.A.

SELLING DEPARTMENT IN THE UNITED STATES.

NEW YORK,	17 Cortlandt Street,	Westinghouse,
BOSTON,	Hathaway Building,	Church, Kerr & Co.
PITTSBURGH,	Westinghouse Building,	
CHICAGO,	126, 128 Lake Street,	
PHILADELPHIA,	608 Chestnut St., M. R. Mackie, Jr. & Co.	
ST. LOUIS,	306, 304 Washington Ave.	
KANSAS CITY,	319 Union Avenue,	Fairbanks & Co.
DENVER,	1220 Seventeenth Street,	
OMAHA,	1619 Capitol Avenue, F. C. Ayer.	
PINE BLUFFS, Ark.	Geo. M. Dilley & Sons.	
SPRING LAKE CITY,	209 S. Main St., Utah & Montana	
BUTTE, MONT.	E. Granite St.	Machinery Co.
SAN FRANCISCO,	21 and 23 Fremont St., Park & Lacy Co.	
PORTLAND, ORE.	33, 35 N. Front St., Park & Lacy Mfg. Co.	
CHARLOTTE, N. C.	26 College St.	The D. A. Tompkins Co.
ATLANTA, GA.	45 S. Prior St.	Keating Imp. & Mfg. Co.
DALLAS, TEX.		C. E. James & Co.
CHATTANOOGA, TENN.		

J. T. FOLEY & CO.
Atlas Boilers and Engines.
NASHVILLE, TENN.
Write for prices.

ENGINES AND BOILERS

FROM 2 TO 400 HORSE-POWER.

The strongest, most compact and best built outfitts on the market.

Wood-working and Iron-working Machines a Specialty.

Send for Catalogue B.
THE GLOBE MACHINE CO.
35 Broadway, New York.



The Stratton Separator DELIVERS Dry Steam

To your engine or for any other purpose, no matter how long your steam pipe, or how much your Boiler may Prime.

An absolute safeguard. A source of economy.

**The STRATTON
SEPARATOR CO.**
32 Cortlandt St.
NEW YORK.

**CLEVELAND AND HARDWICK
ERIE ENGINE WORKS.**
MANUFACTURERS OF STEAM ENGINES
and BOILERS.
ERIE, PENNA.

SEND FOR THIS BOOK
STEAM
FREE ON APPLICATION.
THE BABCOCK & WILCOX CO. WATER TUBE
STEAM BOILERS
30 CORTLANDT ST. N.Y.
107 HOPE ST.
GLASGOW, SCOTLAND.
STEAM BOILERS
MANUFACTORIES IN UNITED STATES, SCOTLAND, FRANCE, GERMANY & AUSTRIA.

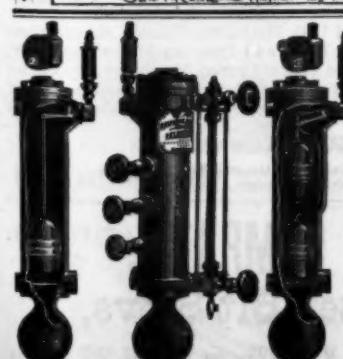
Awarded the Grand Prize at late Paris Exposition.



BEFORE SHUTTING DOWN FOR REPAIRS or putting in any new boilers, investigate the merits of the
RELIANCE
Safety Water Columns

Many large corporations have found it profitable to discard the common appliances and adopt these safety guards. Of course you need not do so unless you wish to, but it is worth your time to investigate. There is always economy in safety, and any safety appliance is worth the time it takes to examine it. Send for illustrated price-list.

RELIANCE GAUGE COMPANY,
Argyle Building. Cleveland, Ohio.



Foundry and Machine Dept.

Harrisburg Car Manufacturing Co.

HARRISBURG, PA.

Manufacturers of the Ide Automatic Engine, Compound and Standard pattern. Also builders of boilers and complete power plants. New York Office, Messrs. Fleming & Kimball, 27 Day street. New England Office, Messrs. John Post, Jr. & Co., 70 Kilby street, Boston. Baltimore Office, Messrs. Thomas K. Carey & Bro., 56 Light street, Baltimore.



PAYNE HIGH-SPEED CORLISS ENGINE.

Shaft Governor Combined with Corliss Wrist-Plate.
Economy of Fuel and Regulation equal to anything in use.

**B. W. PAYNE
& Sons,**
ELMIRA, N. Y.

48 Dey Street, New York.
10 S. Canal St., Chicago, Ill.



OIL FUEL

CRUDE OR KEROSENE.

AUTOMATIC FUEL FEED. AUTOMATIC WATER FEED.

AUTOMATIC ENGINE.

For uniformity of speed, economy of fuel, economy of labor, the "Racine Automatic Engine and Boiler" has no equal. For electric lighting the "Racine Automatic" stands equal, if not superior, to any. For the past year a "Racine" engine, 650 cylinder, has been running with the greatest ease a 150 light 16 c. p. machine, varying only two revolutions as between load and no load. Being automatic in fuel and water feed, and the engine automatic in its government, it needs no special attendant. Having lighted the fire and gotten up steam, the operator can then attend to other business. We make stationary and marine outfitts from 2 to 10 horse-power. Engines sold independent of boilers. We make the "Racine" Pumping Outfitts and the "Racine" Crude Oil Burners for any size boilers. Agents wanted in territory not taken. Send for Catalogue E to the

Racine Hardware Manufacturing Co., Racine, Wis.

THE CURTIS PATENT DAMPER REGULATOR

It is the Cheapest and Most Durable. It is the Most Simple, The Most Powerful, The Most Stylish, and will work as Close as any other.

PRICE-LIST, ERECTED AND WARRANTED.

No. 1, for 50 horse-power, \$80. No. 2, for 100 horse-power, \$100.

No. 3, for 150 horse-power, \$150.

Special quotations for five hundred horse-power and upwards.

MANUFACTURED BY
THE CURTIS REGULATOR CO., 160 BEVERLY ST., BOSTON.

GENERAL AGENCIES.
NEW YORK, 109 Liberty st.
PHILADELPHIA, 2035 N. Front st.
MINNEAPOLIS, 210 S. Third st.

CHICAGO, 218 Lake st.
ST. LOUIS, 611 Walnut st.
NEW ORLEANS, 91 Union st.



The ORIGINAL UNVULCANIZED PACKING,
CALLED THE STANDARD.
As it is the Packing by which all others are compared.

Accept no packing as JENKINS' PACKING unless stamped with our "Trade Mark."

JENKINS' BROS.
71 John St., New York. 21 N. Fifth St., Philadelphia.
105 Milk St., Boston. 54 Dearborn St., Chicago.

Morrison's Patent Self-Lubricating Packing.

Best for Water or Steam. Best for Ammonia.

O. PIGE OF CITIZEN'S RAILWAY CO., ST. LOUIS, February 16, 1886.

ROBERT MORRISON, Esq.:

Dear Sir—in reference to your Packing, I desire to say that having used it on Engines and Pumps at the St. Louis Elevator, and at the St. Louis Ca le & Western Power Plant, and am at present using it on two 100 horse power Coal Engines in valve stem and piston rod at the Citizens' Railway Co. Power Station, all of the above under severe service, that it has given a better satisfaction than any Packing that I have ever used. Respectfully yours,

H. A. F. LEEZ, Chief Engineer.



PAGE BELTING CO., BOSTON, MASS.
EASTERN AGENTS, CONCORD, N. H.

ROBERT MORRISON, Sole Manufacturer, ST. LOUIS, MO.

CORDES MAN, MEYER & CO.

171 & 173 W. SECOND STREET, CINCINNATI, OHIO.

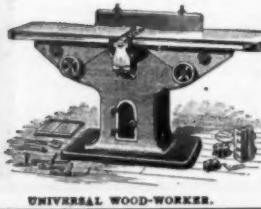
FINE GRADES OF LATHE

Wood-Working Machinery

OF EVERY DESCRIPTION.

Planing Mills, Furniture and Chair Factories, Carriage, Wagon and Agricultural Works.

Write for our latest catalogue and price-list. Correspondence solicited.



OUR IMPROVED SWEEPSTAKES PLANER, MATCHER AND MOULDER

IS SIMPLE, STRONG AND DURABLE.

Never Fails in Yellow Pine or Hard Lumber.

Recent improvements make it the most complete Planer, Matcher and Moulder in the market for the money, which is attested by daily testimonials. No other Planer and Matcher made that uses the Ellis Patent Three-Part-Journal Boxes. It has an extra Head and Arbor for making Moulding and all odd work. Two Belts drive the Top Cylinder. All Cutter Heads are made of Cast Steel. All Expansion Links and Gears are BUSHED with BRASS. It has a

POWERFUL FEED. Heavy Countershaft furnished with each machine. PRICE:

To plane with top head 8" wide, under head 8" wide and match 12 1/2" wide, weight 3,500 lbs. \$350

" " " " and match 12 1/2" wide, weight 3,000 lbs. 425

" " " " 8 1/2" " 3,000 lbs. 360

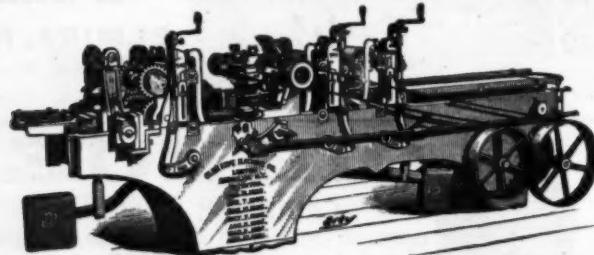
Write for Special prices. Also for our 8-page catalogue, showing a full line of Sash, Door, Blind and Furniture Factory Machinery made by us. Address

BOWLEY & HERMANNE, WILLIAMSPORT, PA., U. S. A.

Glen Cove Machine Co., Limited,

MANUFACTURERS OF

IMPROVED PLANING MILL MACHINERY.



No. 2.—Fast-Feed Planing and Matching Machine. 13 feet 9 inches long. Weighs 8,000 pounds.

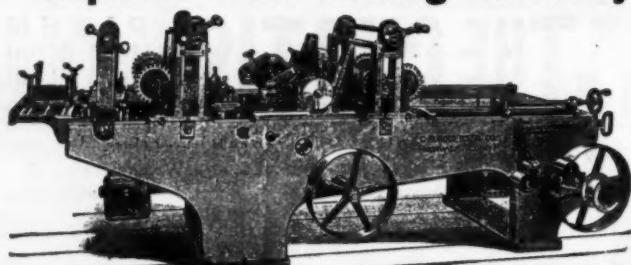
Heavy Fast Feed Planing and Matching Machines, Double Surfacing and Inside Molding Machines a Specialty.

Office and Works. 34 CLAY ST., BROOKLYN, N. Y.

C. B. ROGERS & CO.

MAKERS OF Improved Wood-Working Machinery.

PLANERS.



MOLDERS.

MORTISERS, TENONERS, BAND AND SCROLL SAWS, &c.

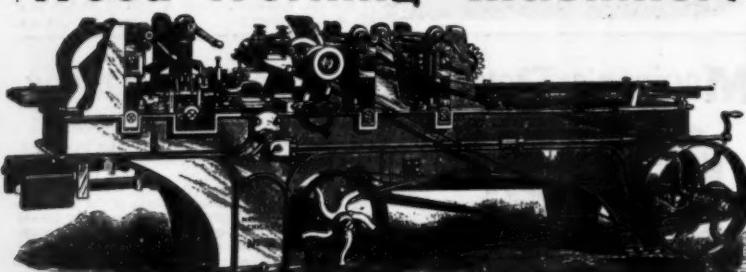
Office and Works, NORWICH, CONN. Wareroom, 109 Liberty Street, N. Y.

THOS. K. CAREY & BROS., AGENTS, BALTIMORE, MD.

S. A. WOODS MACHINE CO.

Manufacturers of and Dealers in

Wood-Working Machinery,



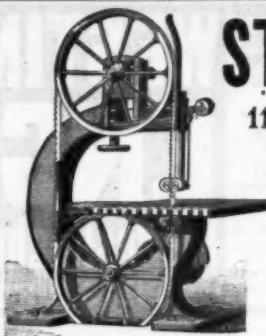
Planing and Moulding Machines a Specialty.

Send for new Illustrated Catalogue just issued.

Warehouses—91 Liberty Street, NEW YORK. 172 High Street, BOSTON. 61 S. Canal Street, CHICAGO. Works—SOUTH BOSTON, MASS.

STANDARD MFG. CO.

110 to 132 Main St., EDINBURG, IND.



\$80 will buy the best Band Saw in the world.

\$100 will buy our new patent 40-inch Band Saw.

\$100 will buy the best Automatic Rip Sawing Machine, (weather-boarding attachment included) and Saw.

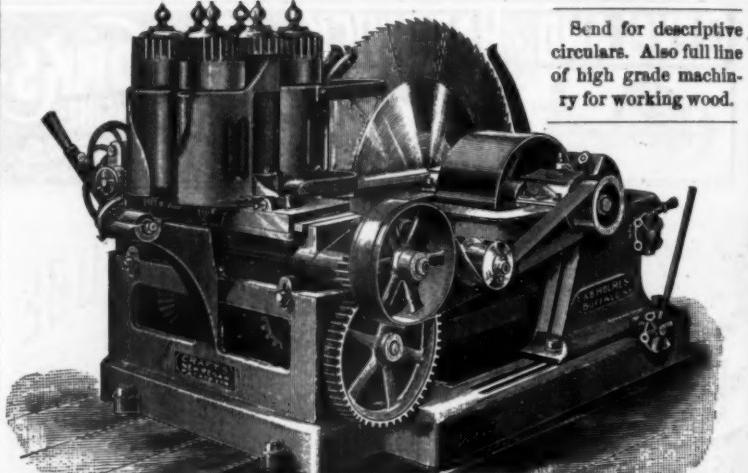
\$125 will buy our New No. 2 Self-Feed Rip Saw complete as above.

MANUFACTURERS OF

High Grades OF Machinery.

\$185 will buy our New Patent Band Re-Sawing Machine.

Craft's New and Improved Segment Resaw

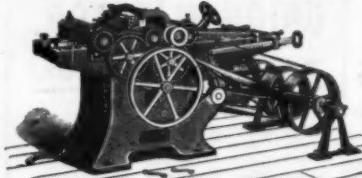


Send for descriptive circulars. Also full line of high grade machinery for working wood.

Our fine line of Wood-working Machinery recently on exhibition at the International Fair, Buffalo, N. Y., will be on exhibition at Piedmont Exposition, Atlanta, Ga. Southern wood-working people invited to inspect same.

E. & B. HOLMES,
59 CHICAGO STREET, MANUFACTURERS, BUFFALO, N. Y.

The Clipper Planer, Matcher AND Moulder.



The Best and Most Convenient of its Class on the market. Cut Gearing and all our recent improvements. Cylinder is Double Belted. No Extra Attachment Required for Working Moulding. Weight 3,000 pounds. Write for Special Price.

We are Builders of HIGH-GRADE
Wood-Working Machinery.
SEND FOR ILLUSTRATED CIRCULARS.

INDIANA MACHINE WORKS, Fort Wayne, Ind.

Wood-Working Machinery.

Circular Saw Mill Machinery, Clapboard and Lath Machinery, Planers, Matchers and Molding Machines, Band and Scroll Saws, Sash, Blind and Door machinery a specialty, Surfacing Machines, Re-Saws, "Buzz" Planers and Veneer Cutting Machinery, Spoke and Axe Handle and Bobbin Machinery, Saws and Belting and General Mill Supplies. Send for catalogue and estimates, stating exactly what is required. Largest machinery dealers in the United States.

W. E. DREW, Agent,

S. C. FORSAITH MACHINE CO. Manufacturers and General Machinists and Gearers. Manchester, N. H.

PETER GERLACH & COMPANY, CLEVELAND, OHIO.

Manufacturers of Alligator Chisel-Bit Saws,

The CHAMPION STAVE, HEADING and SHINGLE MACHINES. Ice Tools and Mill Supplies.

The Largest Dry-Kiln Plant in the World.

MERIT WINS.



"THE STANDARD" KILN has points of MERIT not possessed by any other make. Solely for this reason a contract for TWENTY KILNS, with a daily drying capacity of 200,000 feet (13'-85" x 17' x 9') and 7'-125" x 17' x 9') has been awarded to us by the KENTUCKY UNION LAND CO., Clay City, Ky.

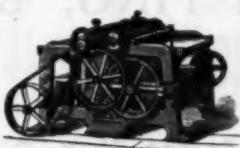
**NEW AND IMPROVED APPARATUS,
Steel Blower, Steel Pipe, Steel Jacket.**

Write for prices before contracting elsewhere.

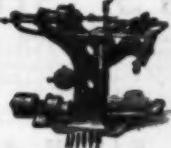
The Standard Dry Kiln Co.
PATENTED AND SOLE MANUFACTURERS,
1224 to 1230 West Main Street, LOUISVILLE, KY.



No. 2½-Pacific Planer and Matcher.



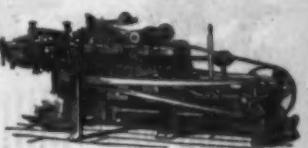
No. 4½-Smoothing Planer.



Horizontal Borer.



No. 2-Self-Feed Rip Saw.



No. 2-Molding Machine.



No. 2 Fret Scroll Saw.

W. H. DOANE, Pres't.

J. A. FAY & CO.

CINCINNATI, OHIO.

D. L. LYON, Sec'y.

Manufacturers of
—PATENT—

Improved Wood-Working Machinery

OF EVERY DESCRIPTION,

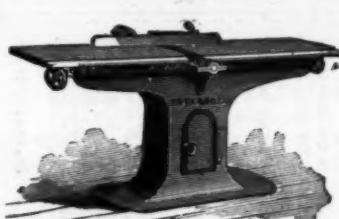
For Planing Mills, Sash, Door and Blind Shops, Furniture, Carriage and Wagon Factories, Spoke, Wheel and Agricultural Works, Car Shops, etc.



No. 2 Band Saw.

Every Machine Tested and Warranted. Send for Circulars and Estimates.

"AWARDED SPECIAL GRAND PRIZE AT THE GREAT PARIS EXPOSITION OF 1889."



Hand Planer and Jointer—8, 12, 16, 20 and 24 inches wide.

THE EGAN COMPANY,

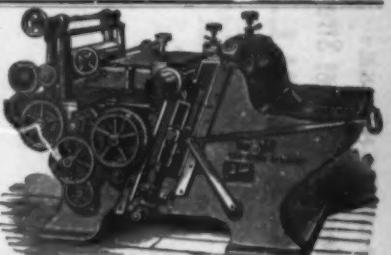
228 to 248 W. Front Street, CINCINNATI, OHIO.

MANUFACTURERS OF

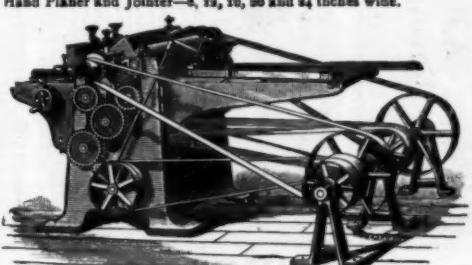
Wood-Working Machinery

The Most Complete Line in the United States. Complete Outfits Furnished.

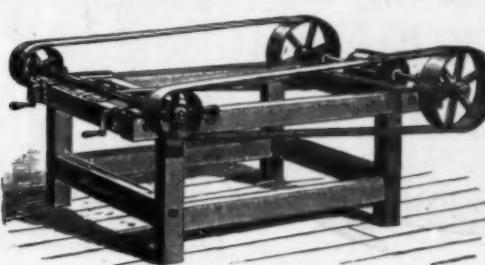
Write for catalogue and prices.



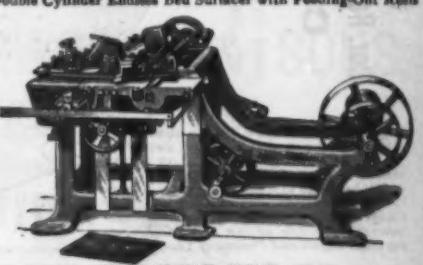
166



No. 2½ Planer and Matcher.



Double Sand Belt.



Double-Head Panel Raiser.

Wood Working Machinery

COMPLETE OUTFITS FOR PLANING MILLS

H. B. SMITH MACHINE CO.

Send for catalogue and visit our extensive warerooms if possible. 925 MARKET STREET.
PHILADA, PA., U. S. A.



The Osborn COTTON GIN Lubricator.

PATENTED.

Consists in the application of oil to cotton being ginned. The quality of the cotton is thereby improved. The friction of the ginning operation is reduced. There is less breakage of the fibre, and consequently a greater average length of staple. The gin saws are prevented from gumming, gin cutting is obviated and the liability of fire from friction is diminished. The above are some of the advantages resulting from the use of this improvement. Territory for sale. Agents wanted. Apply to

C. H. MERRY,
TAZOO CITY, MISS.

**The Fall River Spool & Bobbin Co.
OF FALL RIVER, MASS.**
Manufacture every variety of
SPOOLS AND BOBBINS.

Bobbins, Spools, Shuttles,
AND ALL MANUFACTURERS' WOOD SUPPLIES
AND SPECIALTIES IN MILL TRADE.
The GREENE & WOOD MFG. CO.
NEW BEDFORD, MASS.

J A. V. Smith
MANCHESTER, N. H.
Has made more
Steel Fliers

than the aggregate of all other flier makers.

Has obtained more patents on Fliers than any other party.

Can make Fliers with the use of his patents far superior to any other maker.

He incorporates into every Flier one or more improvements patented.

Has the best facilities.

Most skilled workmen.

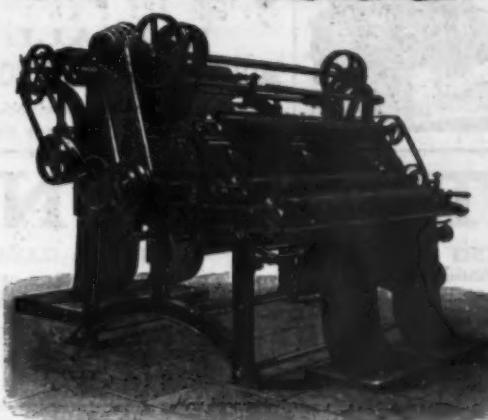
Can make a Flier cheaper.

Guarantees satisfaction.

TRY HIM.



THE CROSSELIN-MOSER PATENT Universal Raising or Napping Machine FOR ALL KINDS OF COTTON OR WOOLEN FABRICS.



THE advantages obtained by this Machine, which is used by the best Manufacturers and Finishers in Europe, are that the raising is FAR MORE EVEN and FULLER at the bottom, so that the goods raised on it feel MUCH THICKER and SOFTER than can be obtained by any other Card-Raising Machine or Teazle Gig. This result being obtained with less waste of material (flocks), and AN ENORMOUS SAVING IN TIME, LABOR AND POWER.

One of these Patent Raising Machines will do the work of six Card-Raising Machines of any other patentee, or eight Teazle Gigs, and by means of the differential motion raises, WITH ONE AND THE SAME CARD AND WITH EQUAL FACILITY, THE HEAVIEST as well as the LIGHTEST and SOFTEST Fabrics. The Machine raises goods either dry or wet, and also after bleaching; it is equally well adapted for backing as for face goods; it raises equally well the thinnest Shirting as the heaviest Cloth.

It is patented all over Europe and in the United States of America, and is now in use for raising:

COTTONS: Shirtings, Calicos, Twills, Imperials, Lambkins, Velvets, Cords, Moleskins, Fustians, Flannelettes, Trouserings, Blankets, Quiltings, Domets.

MIXED GOODS: Angola Flannels, Blankets, Rugs, Winseys, Unions, Shawls.

WOOLENS: Flannels, Beavers, Blankets, Shirtings and Fine Dress Goods.

The Machine takes very little power, a 3-inch strap will drive it under any circumstances. As everything on it is self-acting, it does not require an experienced man to work it.

CARD CLOTHING SUPPLIED.

Refer by permission to Robert Dobson & Co., Pittsfield, Me.; R. S. Frost & Co., Boston and New York; Hale & Frost Mfg. Co., Hinsdale, N. H.; G. T. Murdoch & Son, New Boston, Ct.; Washington Mills, Lawrence, Mass. Full particulars on application to

CHAS. HEAP.

SOLE PROPRIETOR
IN THE
UNITED STATES.

HERBERT H. HEAP,

AGENT,
Room 92, 820 ATLANTIC AVE.
BOSTON, MASS.

One of these Machines on exhibition and in operation within 15 minutes of the postoffice, Boston. Manufacturers visiting the city can see sample pieces of their own goods napped.

Dyeing, Drying and Finishing Machinery

FOR COTTON WARPS AND PIECE GOODS.

H. W. BUTTERWORTH & SONS,
PHILADELPHIA, PA.

* AMERICAN COTTON MACHINERY. *

PETTEE MACHINE WORKS,
NEWTON UPPER FALLS, MASS.

MAKE A SPECIALTY OF

REVOLVING FLAT CARDS, Latest Pattern.
COMBINATION CARDS, " "

Arranged with Collars or for Railway Heads.

* LOW PRICES. *

CORRESPONDENCE INVITED.

PLANS OF CARD ROOMS FURNISHED.

VAN WINKLE GIN & MACHINERY CO.
ATLANTA, GA., and DALLAS, TEX.



MANUFACTURERS OF
Cotton Gins, Feeders

Condensers and Presses,

COTTON SEED OIL MILLS,

SHAFTING, PULLEYS, WIND. MILLS, TANKS, PUMPS, Etc.



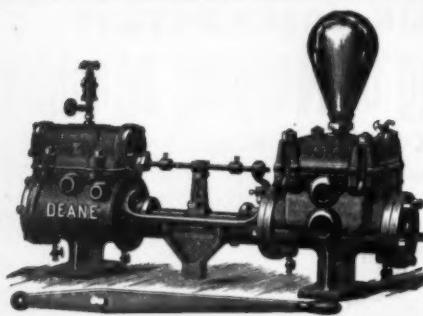
Write for Catalogue.

"SLASMENE SIZE"

Is becoming universally adopted. Every manufacturing firm who tries it continues its use. It gives a beautiful Soft Feel, Good Weaving, good appearance to the cloth. Strengthens the Warp Threads, and weaves equally as well in Hot, Cold, Dry or Moist Atmosphere. The Only Size that does away with over half the steam in weaving rooms in Frosty weather. No oil or tallow required. Perfectly free from mildew, and only a small quantity required to starch. Trial barrels sent on application; if not satisfactory will not be charged and freight paid both ways. Sizes made for adding weight. Price 5 cents per pound. It will pay you to try it. Extensively used in Southern States.

CORRESPONDENCE SOLICITED.

EASTWOOD & CO., Fall River, Mass.



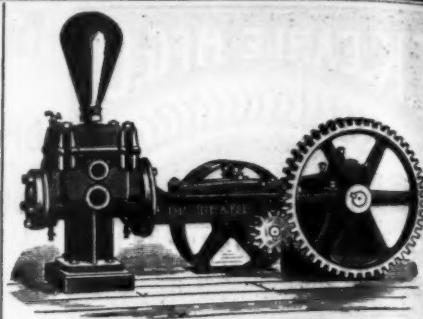
THE DEANE STEAM PUMP CO. HOLYOKE, MASS.

MANUFACTURERS OF
**Steam and Power Pumping Machinery,
FOR ALL PURPOSES.**

MORTON, REED & CO., Agents, BALTIMORE, MD.

Birmingham Office and Warehouses: No. 6 SOUTH 20TH STREET.

Send for New Illustrated Catalogue, No. 22.



WORTHINGTON STEAM PUMPS

SOUTHERN SELLING AGENTS:
THOS. C. BASSHOR & CO., Baltimore, Md.
KENTUCKY MACHINERY CO., Louisville, Ky.
W. H. PERRY'S MACHINE WORKS, Nashville, Tenn.
LIVERMORE FDRY. & MACH. CO., Memphis, Tenn.
WALTER T. FORBES, Atlanta, Ga.

Boston Philadelphia

SEND FOR ILLUSTRATED CATALOGUE

HENRY R. WORTHINGTON
NEW YORK.

Chicago St. Louis St. Paul San Francisco

SOUTHERN SELLING AGENTS:
SMITH & COURTNEY, Richmond, Va.
MECKLENBURG IRON WORKS, Charlotte, N. C.
E. V. WHITE & CO., Norfolk, Va.
M. SCHWARTZ, New Orleans, La.
F. W. HEITMANN & CO., Houston, Texas.

Otto Gas Engine

Over 18,000 in use.

Working Without Boiler, Steam, Coal, Ashes or Attendance.

Started Instantly by a Match, it gives full power immediately. When stopped, all expense ceases.

Guaranteed to Consume 25 to 75 Per Cent. less Gas than any other Gas Engine Doing the same Work.

No explosions, no fires nor cinders, no gauges, no pumps, no engineer or other attendant while running. Recommended by insurance companies.

UNSURPASSED IN EVERY RESPECT for hoisting in warehouses, printing, ventilating, running small shops, &c. Sizes: 1 to 25-Horse power.

Branch Office, 151 Monroe St., Chicago, Ill.

OTTO GAS ENGINE WORKS, Schleicher, Schumm & Co.

33d & WALNUT STS., PHILADELPHIA.

SOUTHERN MILLS SHOULD NOT HAMPER

their natural advantages by the use of inferior machinery. Use none but the RABBETH SPINDLE. We make the highest grade of Warping, Spooling and Twisting Machinery on the market. Keep note of the improvements that we are constantly introducing.

GEO. DRAPER & SONS, HOPEDALE, MASS.

 CLEVELAND CITY FORGE & IRON CO. { Cleveland, OHIO. } The Best & Cheapest Pressed Wrought Iron Turnbuckles

Shafting, Hangers and Pulleys

{ For Mills and Factories
of every description.

Flour and Corn Mill Outfits Complete.

Over 1,000 of our Roller Mills in use.
Over 8,000 of our Portable Grist Mills in use.

{ Highest Product
Guaranteed.



We offer a Complete Mill and Sheller for \$115.00

Adapted to any kind of power. A boy can run and keep it in order.



NORDYKE & MARMON COMPANY, INDIANAPOLIS, IND.

Write for pamphlet
"Mills and Milling."

Correspondence Solicited.



For SUCTION, WATER, STEAM, GAS, AIR, ACIDS and
for every purpose to which a Hose can be applied.

SPHINCTER GRIP
ARMORED
PAT.
1882, '85, '86, '88.

RESISTANCE to Great Pressure;
Unobstructed Flow of Water; Increased Flexibility and Perfect Protection are some of its Advantages.

WE GUARANTEE every foot sold to withstand constant service for such longer period as to render its actual cost much less in the end. Every wind of the wire can be cut without loosening or uncoiling.

The making, vending or use of any SERVICEABLE ARMORED WIRE-BOUND HOSE not of our manufacture is an infringement on one or more of our patents, and any violation will meet with instant prosecution. Brass plates mark each coil and admonish infringers, whether evil-minded or ignorant.

WATERBURY RUBBER COMPANY,

Sole Manufacturers and Proprietors,

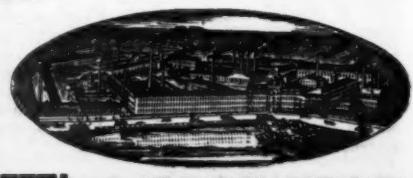
49 WARREN STREET,

NEW YORK.

WASHBURN & MOEN MFG. CO., WORCESTER, MASS.

—MAKERS OF IRON AND STEEL.—

MANUFACTURERS OF



Iron, Steel and Copper Wire, Wire Rope, Barbed Wire.

Chicago Warehouse, 107 Lake St.
New York Warehouse, 16 Cliff St.

Manufacturers' Record.

PUBLISHED EVERY SATURDAY BY THE
MANUFACTURERS' RECORD CO.

R. H. EDMONDS, EDITOR.
WM. H. EDMONDS, BUSINESS MANAGER.

OFFICE,
COR. EXCHANGE PLACE AND COMMERCE STREET,
BALTIMORE.

NEW YORK OFFICE, - - - 132 NASSAU STREET.

THOMAS P. GRASTY, Southern Staff Correspondent.
Headquarters at FLORENCE, ALA.

SUBSCRIPTION, - - - \$4.00 a Year.
To Foreign Countries, - - - 6.50 a Year.
BALTIMORE, NOVEMBER 16, 1889.

To Draw Capital South.

With a view to attracting the attention of the entire financial interests of the United States to the growth of the South, to the advantages of this section and to the opportunities for profitable investments of all kinds that are to be found in every State, from Maryland to Texas, the MANUFACTURERS' RECORD will shortly publish a "Special Bankers' Edition," a copy of which will be sent to every bank (national, State and private) in the United States, to loan and trust companies, brokers, leading insurance companies and financial institutions generally. Nothing of this character has ever before been undertaken in this country, and never before has such an opportunity been afforded to reach every financial institution in the United States. The value of this to the South cannot be overestimated. It will draw the attention of the entire banking and allied interests of the whole country to the marvellous advancement and possibilities of the South. For Southern bankers, owners of mineral and timber properties that are for sale, real estate agents, transportation lines, and all others who wish to reach the moneyed men of the whole country, this "Special Bankers' Edition" is the best advertising medium ever offered. It will result in attracting many millions of dollars to the South for investment, and in inducing many thousands of people to make a personal investigation of the advantages and the resources of this section.

THE Talladega Iron & Steel Co., of Talladega, Ala., is having an active demand for its pig iron from leading iron and steel manufacturers in Pittsburgh. This company is composed mainly of English capitalists, and its manager is a well-known English iron-maker. The iron so far produced is said to class as Bessemer, and is made from high-grade local ores.

Why not subscribe for the MANUFACTURERS' RECORD? Price \$4 per year or six months for \$2.

The One Great Drawback.

The immense undeveloped wealth of the South is universally conceded. The opportunities open to men of moderate means to become wealthy by wise investments are fully understood. The numbers availing themselves of these openings are increasing in almost geometrical ratio. Every day—as our weekly issues testify—great and small enterprises are begun, and the scope they cover widens continually. All this adds to the material wealth of the whole country and to the individual wealth of thrifty Southerners. But all these enormous gains to the South have had, from the day they began, one great drawback. They have given to many individuals and communities throughout the South absurd ideas of the value of their lands and localities. In these days of patent outsides and insides, the village weeklies furnish their readers with whatever is selected for them by the providers of miscellany for their columns. In this mass of matter are frequently accounts of the wonderful growth of new towns and the money made by the original land owners. Or else there are tales of the fabulous price some farmer has obtained for his worn-out land because some kind of valuable ore has been discovered in it. Then, too, there is a species of confidence operator, altogether too common, who travels around among the people, and, pretending to have found some valuable mineral on their land, persuades the unsuspecting innocents to pay him a fee for examining it and writing a report. His victims, dazzled by the glowing pictures of great wealth that will be theirs if they follow his advice, pay down their dollars cheerfully, read over and over with great glee the splendid report, and show it to all their neighbors.

No newspaper, no well-informed citizen, is at hand to explain to such honest but uninformed folk how great cities have sprung up magically in the midst of forests or old fields. They have none to tell them that the means for development was secured by the land proprietors taking capitalists into partnership; that the latter spent a great deal of money before any returns came from it; that had not such been the case the forests and the old fields would have remained as they were to this day. So in their simplicity these deluded people, thinking of what they have heard or have read, rejoice in bright visions of unrealized but expected wealth, and put tremendous prices upon property when anyone asks its value. The result is that there are hundreds of spots in the South, small towns and farming districts, that might have been humming to-day with the music of machinery, that have lost their opportunities for this generation at least. And there are at least as many more that will have offered to them, within a year or two, equally good opportunities, that will throw them away.

This foolishness—the result of a lack of information—is "the one great drawback" to that universal progress which would send the sunshine of prosperity into the lowliest cabins and the stateliest mansions of the South. To dispel this ignorance, to enlighten the minds of the masses, is a work in which the South's agricultural teachers, its newspapers and its intelligent men of all pursuits might engage for the benefit of all.

THE heavy machinery of the Union Compress Co. at Charleston, S. C., was broken recently, and no work could be done until it was repaired. A link was broken in one press, and the cylinder was fractured. The link was one of two welded wrought iron bands, 9x9 inches square, that hold the machine in place. These are subjected to a strain of 1,500 tons whenever a bale is compressed. Heretofore, when links have been broken, they have been sent North for repair, but in this instance it has been done at home at the South Carolina Railway shops under the supervision of Master Mechanic J. M. Smith. To remove the cylinder and replace it with a sound one required the construction of a derrick strong enough to lift and lower 18,000 pounds. This was done under the direction of Mr. H. W. Crouch. The derrick is to remain a permanent fixture for use should a similar accident occur.

After describing these achievements the Budget says:

It is argued that if Charleston mechanics can do such work as this, there is no use for vessels from all these Southern ports being towed to New York when a shaft breaks or any accident such as that happens. Send them all to Charleston, where there is a ship-yard and extensive iron works that can do it equally as well, and as cheap.

We join with the press of that city in congratulations upon the possession of master mechanics and the necessary machinery for the accomplishment of such heavy work. But while all this may be new to Charles-tonians, it is but an illustration of the changes from the old order to the new that the South is experiencing. Competent mechanics and powerful machines may be found in scores of inland as well as seaport towns, where their presence has done away with the expensive transportation and long delays which used to attend every breakage of machinery.

The successful prosecution of the iron industry has opened the way for the introduction of all others in which iron is the chief material employed; hence the great number of foundries and machine shops reported weekly in our Construction Department.

It is simply a question of time as to when the South will build all the machines needed in her borders, not excepting the locomotives to haul the trains over her railroads. Already the Charleston, Cincinnati & Chicago has at its new foundry and machine shop in Blacksburg, South

Carolina, all things required for locomotive construction, and as soon as the machinery can be set in place this company will begin to build its own engines. This indicates what can and will be done in the near future.

Cotton Stalk Bagging.

Mr. J. M. Forshee, secretary of the Chamber of Industry of Wilmington, N. C., was in Macon, Ga., recently exhibiting samples of half-inch rope made from cotton stalk fibre. According to the Telegraph, he also had a sample of 2-pound bagging made from the same fibre. Mr. Forshee announces that machines have been invented for stripping the stalk and manufacturing the fibre into bagging, and that "the cost of the manufactured article will not be more than four cents per yard. One acre of cotton stalks will furnish enough fibre to make bagging enough to bale five bales of cotton, and as this is about five times as much as is needed, the excess will be used in manufacturing rope and for various other uses to which jute is now put."

IN this issue appears an interesting letter from a special correspondent, who writes of the new town of Linville, in the famed mountain region of Western North Carolina. The beauties of the "Land of the Sky" have been portrayed by the best pens of the day, and yet the theme is ever fresh, for the reason that it taxes the resources of description to secure any measure of just treatment. Linville can be made a paradise of delight for the resident and the tourist, and the gentlemen who have its future in charge certainly merit the fulfillment of their highest expectations. For the good of humanity the MANUFACTURERS' RECORD hopes to see Western Carolina become more thoroughly known that thousands of the sick, to whom a residence there would bring back health and vigor may learn of its advantages. No language can adequately describe the attractions of that country, and Linville is said to be one of the most favored spots of that favored region.

THE industrial issue of the Chattanooga Evening News is a most comprehensive performance in the way of descriptive advertising. The issue contains 32 pages of descriptive matter and advertisements, the whole presenting a thorough exposition of Chattanooga and the territory contiguous thereto as regards industrial establishments and natural resources. One has but to glance over this edition of the News to realize that Chattanooga has not only a great future, but a most impressive present. The city's marvellous growth is one of the most striking features of the general Southern boom, and the News is to be congratulated upon the thorough accomplishment of the task which its industrial issue involved.

Blast Furnaces of the United States in November, 1889.

The American Iron & Steel Association has just completed an exhaustive inquiry into the present condition of the blast furnaces of the United States, noting particularly the new furnaces built and the old furnaces abandoned since the appearance of the last edition of its directory, about two years ago. In this inquiry great care has been taken to eliminate from the list of active furnaces or furnaces which can readily be put in blast all furnaces which do not properly belong to this list, and also to add to it all new furnaces which have been built during the last two years or which are now actually in course of erection. Furnaces which have no existence except on paper have been passed over without notice.

BLAST FURNACES BUILT AND BUILDING IN THE UNITED STATES ON NOVEMBER 1, 1889.
Furnaces Completed November, 1889. Furnaces building Nov., 1889. Annual Capacity of Completed Furnaces November, 1889, in net tons.

STATES.	Anthracite.	Bituminous	Charcoal.	Total.	Anthracite.	Bituminous	Charcoal.	Total.	Anthracite.	Bituminous	Charcoal.	Total.	Net tons.	
Maine	1	1	..	..	..	..	..	..	6,000	6,000	..	..	..
Massachusetts	4	4	..	..	..	..	..	..	14,500	14,500	..	..	..
Connecticut .....	..	..	..	..	..	..	..	..	27,000	27,000	..	..	..
New York	25	4	10	39	..	..	..	..	439,400	185,000	75,000	699,400	..
New Jersey	18	..	..	18	..	..	..	..	303,845	..	..	303,845	..
Pennsylvania	141	73	16	230	1	4	5	2,795,088	2,906,000	62,500	52,600	5,733,588	..	
Maryland	5	2	9	16	2	..	3	200,000	17,000	..	26,600	..	..
Virginia	13	19	32	64	4	4	4	..	367,000	47,500	..	414,500	..	
West Virginia	6	..	6	..	..	..	..	..	180,000	..	..	180,000	..
Kentucky	4	3	7	14	1	1	1	..	77,000	12,000	..	89,000	..	
Tennessee	10	9	19	48	..	..	..	..	300,000	99,000	..	399,000	..
North Carolina .....	..	2	3	5	..	..	..	..	..	7,200	..	7,200	..
Georgia	2	3	5	10	55,000	25,000	..	80,000	..
Alabama	32	12	44	88	6	2	8	1,133,000	144,000	..	1,277,000	..
Texas	1	1	2	8,000	..	8,000	..
Ohio	64	12	76	152	1	1	3	..	1,782,500	46,100	..	1,828,600	..	
Indiana	2	..	2	..	..	..	..	..	30,000	..	..	30,000	..
Illinois	16	..	16	..	1	1	1	..	848,000	..	..	848,000	..
Michigan	1	26	27	54	..	3	1	15,000	..	426,500	441,500	..	868,000	..
Wisconsin	4	6	10	20	1	1	1	..	113,000	99,500	..	212,500	..	
Minnesota .....	..	..	..	..	..	..	..	..	..	..	..	..	..
Missouri	5	3	8	16	..	..	..	..	170,000	44,000	..	214,000	..
Colorado	3	..	2	5	..	..	..	..	60,000	..	..	60,000	..
Oregon .....	..	1	1	2	..	..	..	..	..	15,000	..	15,000	..
Washington .....	..	1	1	2	..	..	..	..	..	10,000	..	10,000	..
Total 25 States.	190	239	146	575	3	19	7	29	3,723,333	8,223,500	1,221,400	13,168,233	..	

We present herewith a tabulated statement of the number and capacity of the furnaces completed on the 1st of November, 1889, in each pig-iron manufacturing State, and not transferred to the abandoned list, and of the number of furnaces then in course of erection in each State, specifying the fuel used or to be used.

Comparing the more important footings of the table above referred to with the corresponding aggregates presented in the Association's directory of two years ago, and adding some other comparative information, we have the following results:

Furnaces.	Nov., 1887.	Nov., 1889.
Whole number of completed furnaces	582	575
Anthracite furnaces	200	190
Bituminous coal and coke furnaces	214	239
Charcoal furnaces	168	146
Number of furnaces building	30	29
Annual capacity of completed furnaces, in net tons	10,990,993	13,168,233
Annual capacity of furnaces building, in net tons	1,122,000	1,204,000

The whole number of completed furnaces on the 1st of November which have not been transferred to the abandoned list is 575, against 582 two years ago. The present total has been obtained by adding 41 absolutely new furnaces which have been completed within these two years and subtracting 48 furnaces which have been transferred to the abandoned list for various reasons—some because they have not been in blast for several years and are badly located, and others

because they have been torn down to make room for new furnaces. All the charcoal furnaces in West Virginia and several in Pennsylvania, Maryland, Virginia, Wisconsin and other States are among the number transferred to the abandoned list. The whole number of charcoal furnaces has been reduced from 168 to 146. A decrease of 10 in the number of anthracite furnaces, which includes those which use mixed anthracite and coke, has taken place, while there has been an increase of 25 in the number of furnaces which use bituminous coal and coke.

The number of furnaces which were actually in course of erection two years ago was 30, and the number now in course of erection is almost as large, 29. Of the new furnaces building 3 are anthracite, 19 are bituminous and 7 are charcoal.

the Iron & Steel Association, compiled his figures, work has been commenced on the foundation for 2 at Middlesborough, and contracts made to locate 2 others there. In Texas 2 are going up. In Maryland there are now 16 completed furnaces, including 2 new furnaces at Sparrow's Point built recently by the Pennsylvania Steel Co., and there are 2 building by the same company and one charcoal furnace building at Principio.

In the Northern States there is now very little activity displayed in the building of new furnaces. Pennsylvania is building only 5, Ohio 2, and Illinois, Michigan, Wisconsin and Minnesota each one. It is just announced, however, that Illinois will soon have 4 new furnaces at Chicago, but work upon them has not yet been undertaken, and hence they are not noted in this table. Of the 29 furnaces given as now under construction in the United States, 18 are in the South, and probably at least a dozen more are definitely secured and the money raised for their construction, so that to that extent we may really say that the South is now building about 30 furnaces.

That feature of this table which will, however, attract the most attention relates to the annual capacity of the furnaces completed and now being erected. The capacity of the 582 completed furnaces in November, 1887, as shown by the directory, was 10,990,993 net tons; the table herewith printed shows the capacity of the 575 completed furnaces in November, 1889, to be 13,168,233 net tons, an increase of 2,177,240 net tons, or 1,943,964 gross tons, in two years. "Of course," says the Iron & Steel Association, "as we have often explained, it is never possible in actual production to come at all near to our aggregate capacity; but the increase in capacity in the last two years has been very large, and when considered in connection with the estimated capacity of the furnaces now building it is very significant of our ability to meet any demand which the country may make upon our blast-furnace owners for pig iron of any quality, spiegeleisen and ferro-manganese excepted."

MR. DEPAUW, of New Albany, Ind., who is building very extensive steel works, says that his company proposes to manufacture by a new process, by which they can make steel direct from the ore. "The process," says Mr. Depauw, "was the invention of Charles Adams, of Pittsburgh, and he claims for his invention that it lessens the cost, but it does not differ materially from other processes now in use. The reduction is accomplished by gas, which is passed directly through an upright column to the ore, mixed with some carbonaceous material. Then the process is directly from the reducing furnace to the open hearth, and from that on the operation is similar to the ordi-

nary methods. This process has been tried and proved very satisfactory in an experimental way, but it has never been attempted on a commercial scale. The saving in the cost is effected in the production of the stock for the open hearth process, as the necessity of a blast furnace is obviated, and it is not necessary to put the ore into what is known as the pig-iron condition before it is made into steel."

THE St. Louis Age of Steel says:

Perhaps the best way to locate the new town or city of Middlesborough, Ky., at the present time is to say it is near Cumberland Gap. Within the next few years we expect to be able to say that Cumberland Gap is one of the most beautiful suburbs of the flourishing iron and steel manufacturing city of Middlesborough. The site of the new city is not a matter of chance. It was foreordained by reason of its very surroundings to become a great manufacturing center. It would be a difficult matter, indeed, to bring together in the same space a greater number of natural advantages than are to be found in the immediate vicinity of Middlesborough. There is an abundance of coking coals, iron ores, limestone and timber. The people who have this enterprise in hand are not "boomers," but practical men, many of them ironmasters in Great Britain, who, after looking over the entire field, determined upon this location as in all respects the most desirable and advantageous. The tunneling of Cumberland Gap, the building of a railroad from Knoxville, the erection of a large hotel, the digging of a canal through the town at a cost of \$100,000, are only a few of the projects completed by the American Association, Limited, and the Middlesborough Town Co. The Louisville & Nashville Railway completed its branch to the north portal of the Cumberland Gap tunnel some weeks ago, while the Knoxville, Cumberland Gap & Ohio Railroad is running trains to Dillwyn Springs, the southern portal. The Louisville & Nashville track is being pushed along the Virginia side, 60 miles or so, by way of Big Stone Gap, to meet the Norfolk & Western at Norton. Other roads are also being pushed towards Middlesborough from the North with great vigor. It is plain to any one who has given the matter careful investigation that in this great tri-State mountain region there is destined to arise a great manufacturing center with profitable occupations for tens of thousands of men, where picturesque scenery, healthful and agreeable climate combine to offer their attractions.

THE Des Moines (Iowa) Register, in a recent issue, contains a letter highly commendatory of the advantages and enterprise of Anniston, Ala. The letter is written in behalf of a party of Iowans who paid a flying visit to Anniston, but remained long enough to become strongly impressed with the great possibilities of that growing Southern industrial center. Its furnaces, mills and factories, and the limitless resources in the shape of raw materials lying at its very doors, struck the Iowans most forcibly. The go-ahead spirit, too, of the people took the Western gentlemen by surprise, and the latter are almost as confident of Anniston's future as the Annistonians themselves. Seeing is believing, and if the population of the North could take a holiday and see what the South is doing and offers, the former section would be considerably depopulated.

If you are not already a subscriber to the MANUFACTURERS' RECORD, send us \$4 and you will receive it regularly for one year or six months for \$2.00.

"An American Prospectus"

MAJOR WEST TOUCHES UP THE MAKERS OF PROSPECTUS LITERATURE.

The Cres Tributary to Big Stone Gap.

Important Ore Discoveries at Cumberland Gap.

HEADQUARTERS
MANUFACTURERS' RECORD'S
EXPLORING EXPEDITION,
BIG STONE GAP, VA.,
November 8, 1889.

Having, with the cheerful concurrence of the audience, bitten off the preceding lecture at a convenient point, we seize the thread of the discourse again and raise hob with it. The latest paper was rather heavy with figures, a matter which could not be helped; but it is not always necessary to discuss the dry data of the laboratory. Indeed, camped out within the shadow of these grand mountains, and listening to the noisy plashing of the sweet-watered Powell river, it is difficult for the average man to restrain and control his feelings enough to be able to think or write figures at all. Yet when I gaze upon these noble, mist-covered heights of a morning and feel the sublimity of their presence, I have to sigh a bitter sigh of regret that I have drawn so largely on a modest stock of adjectives and superlatives and things, in connection with Cumberland and Big Creek Gaps, as to have little left for Big Stone, and nothing at all for Pound Gap, when we get to it. Henceforth I am afraid that I shall be compelled to stick to the clear, concise and instructive but hardly intoxicating style of the Patent Office Reports; in which case readers will have no excuse to accuse me of levity.

To prove that levity is impossible to one with such a serious mission, let us begin to find fault and criticise something or somebody. Your really reliable and wise people always do that, and, I may be forgiven for remarking, with less reason than is furnished by a subject, into the realms of which it will do no harm to make a small excursion.

If there be anything calculated to make a man proud of his fellow-man, or to give him a lively sense of the goodness, unselfishness, fraternity, and self-abnegation of humanity, that interesting thing is a genuine every-day American prospectus. Other literature may be entertaining, or elevating and full of soulfulness, but it is to be doubted if the trained mind can absorb the thoughts and statements of an average prospectus without it being borne in upon the reader that the writing is "inspired." Among other things because, like other inspired writers, the authors of prospectuses always claim the earth and the fulness thereof for their very own. This is not only excusable but proper; since, if we would see our horn exalted in this world we must blow it, for nobody else will do it for us. In performing this laudable disturbance, however, it is not perhaps equally necessary to make individual comparisons, or to point the moral of our own superiority, or adorn the tail of our projective kite by remarks to the disarrangement of our neighbors. Yet, in all seriousness, the temptation to do this seems to be irresistible to people who start out to set forth the attractiveness of any given place or district. Not content with making assertions and claims, which if they stand

the test of cold, practical expert examination, are sufficient to compel prosperity and all the facilities and conveniences requisite to prosperity, the strong tendency is to paint the lily with a little fling or two at other places and localities, which whatsoever the failings on their part, have somehow managed to "get there" successfully.

The foregoing remarks are offered as a result of the perusal of 1,728 prospectuses of various and sundry Southern enterprises, nearly all of which, while congratulating Providence that the particular interest represented has everything there is worth talking about in the country, wind up with a *deinde carthago* hurled at Birmingham, and sometimes Chattanooga; places which, as everybody knows, from the ordinary prospectus point of view, never had much if any legitimate basis, and have gone on until they have become great and typical American industrial centers, in impious defiance of all conditions and prospectuses. The prospectus of the Big Stone Gap Improvement Co. is an excellent work of its kind. It is full of condensed data and information concerning the resources, advantages and so on, of the company's lands and of the district, and its matter is all the more calculated to carry conviction, because it gives high and well known authorities for what it states and claims. It is nearly free from the sort of thing I have been discussing, but not quite, and as the project it supports has been given a full meed of praise in these reports, it will do no harm to use a small sentence from the book to illustrate the point in hand: "The wonderful growth of Birmingham and Chattanooga, neither of which possess the advantages of Big Stone Gap, show the potent effect of having at hand the materials for the production and manufacture of even low grade iron." (Italics my own).

That means that while Birmingham and Chattanooga have a little coal, iron and limestone, sufficient to make some inferior iron, Big Stone Gap, as elsewhere claimed in the pamphlet, is the one future great place on the continent where the fine coking coals of the Cumberland Mountain region are to smelt the Bessemer ores of the vicinity and likewise the 60 per cent. magnetic ores of the Cranberry region is concerned, rivalry is out of the question. Birmingham does not make Bessemer steel, because her ores are not Bessemer—that is conceded. It is also admitted that most of the steel now used in Continental Europe is made from ores like the Birmingham ores, by the Basic process. Should the Bessemer Association (Limited) let go its grip on the basic patents in this country, it is the opinion of many eminent authorities that Birmingham could make Basic steel in easy competition with all the Bessemer plants in the Union. But neither Birmingham nor Chattanooga have done this yet, any more than Big Stone Gap has made Bessemer pig with coke of her own production. Things like the sentence quoted from the prospectus are calculated to bring on reprisals. The Cranberry ore field, much as is hoped for it, is yet not quite as clear a demonstration as one could wish, and the ores around Big Stone Gap that are said to come within the Bessemer limit have not been exploited to a point making that claim perhaps entirely proven. All this is written in kindness, in the hope that the idea may float around and catch somebody. There are hundreds of localities in the South, which, like Big Stone, present all the resources, advantages

and facilities necessary to extended industrial development. That being the fact the friends of such places will not be advantaged by any appearance of detracting from others, especially where the others have made their lucky hit and raked in their pile: It is a no end—pleasant sight to see brethren dwell together in peace and unity.

Having thus improved the occasion, it is time to change the subject and to consider the iron ore resources of the Big Stone Gap region. In the papers of the Exploration referring to Cumberland and Big Creek Gaps, a good deal has been written concerning the Clinton (red fossiliferous) ores of the Powell and Poor Valleys. The Poor Valley lead of these ores is one of the principal iron resources of the Big Stone development. In the report of Messrs. McCrae and d'Invilliers will be found the following:

These are the ores mined in New York, Central Pennsylvania and in the Chattanooga and Birmingham districts of Tennessee and Alabama, where they attain an abnormal development and are the chief source of supply for the many coke furnaces of these two States. Nowhere in Virginia do these ore beds reach anything like the development of those in the two more Southern States, although attention has been called for many years to their existence in a workable state, great abundance, and with average purity through the Poor Valley region of Southwest Virginia. As the general geological map will show, the rocks containing those "fossil ores" do not outcrop on the Kentucky side of the Cumberland plateau; or if they do, they are exposed only to a very limited extent along the north base of Pine mountain, by reason of a fault, and are known to contain any workable deposits of iron ore.

In Virginia these rocks outcrop all along the Poor Valley ridge continuously from beyond Cumberland Gap in Tennessee east for sixty miles to Big Stone Gap in Wise county, where they fold around the Powell Valley anticlinal and return again on the south side of the Powell river into Tennessee.

In that part of the Valley lying between Big Creek and Cumberland Gaps the Clinton ores occupy three and possibly four distinct beds, separated by considerable intervals. For a matter of fourteen to seventeen miles east of Big Creek the principal bed appears to be approximately six feet thick. Nearer Cumberland Gap the separation between the beds are less wide, and the six feet Big Creek bed is narrowed to five, four and a half and even four feet. At least that was the record as far as it had been made up when we were there. East of Cumberland Gap again, in Poor Valley, and before the Big Stone Gap district proper is reached, McCrae and d'Invilliers report indicates some thickening of the principal or upper beds: Referring to the Clinton deposits in this intermediate country the report observes: "They are here quite regularly bedded, which is also the case for some miles east of Cumberland Gap; they are quite accessible at many points and have a large aggregate acreage. But they are everywhere to be classed as thin beds, often too thin to warrant mining; they show a variable section in nearly every mile of their outcrop, and as the analyses will show, the good ore is largely confined to one bed, the upper bed of the three. * * The best ore is found in the ridge, where it has been exposed to the leaching process and where it can be most cheaply mined."

The following sections and analyses reported by McCrae, will afford an idea of the conditions of the fossil ore resources between the Gaps. The first example is drawn from an opening at water level on a branch about eight miles southwest. The ore is of the hard fossil variety.

SECTION.
Slate roof.
Ore, calcareous, upper branch .3 ft. 0 in. } 5 feet
Greenish slate parting..... 0 " 5 " } 5 inches
Ore, lower branch..... 0 " 0 " }

ANALYSIS OF ORE FROM BOTH BENCHES.

Metallic iron	24.900
Phosphorus .....	.441
Lime as carbonate	25.640
Magnesia as carbonate	1.498
Silica	9.970
Phosphorus in 100 parts of iron	1.771

An opening near by the foregoing and

about 30 feet above drainage, probably the same bed gave:

SECTION UPPER OPENING.	
Ore	2 feet 3 1/2 inches.
Slate parting	0 " 5 1/2 "
Ore	0 " 7 "
Slate	0 " 1 to 2 "
Ore	0 " 2 "

4 feet 8 inches.

"The analysis of ore from the three benches, including the small parting dividing the two lower benches gives:"

Metallic iron	46.030
Phosphorus .....	.447
Silica	19.390
Phosphorus in 100 parts of iron .....	.970

A considerable number of analyses might be given, illustrating the inter-gap section of the fields east and west, but they appear unnecessary here. As McCrae and d'Invilliers state, the iron ore is thinly, and quite variably bedded, and in many places the intercalations of shale and slate will render practical development difficult if possible. Quite generally the quality is good enough, the percentage of metallic iron running from 38 to 50. Within the localities directly tributary to Big Stone Gap the conditions seem to be somewhat improved. On the Poor Valley side there is an outcrop of Clinton ore approximating four feet in thickness, with some, apparently, insignificant partings in places. The dip of this ore, following the profile of the mountain, and near the surface, gives promise of the possibility of stripping to some extent, and, elsewhere it is thought that it can be economically mined from the Valley upward. Several openings have been made on this horizon, resulting in an appearance of considerable persistency and local homogeneity, but the exploitation is not far enough advanced to be conclusive. An analysis by McCrae of a sample taken from this outcrop gives, according to the Big Stone Gap Improvement Co.:

Metallic iron	56.600
Sulphur	0.018
Phosphorus	0.116
Insoluble residue	18.140

Should the promise of these near-by beds be redeemed, they must constitute an important addition to the iron resources of the Gap. In Wild Cat Valley an opening (also reported on by McCrae) shows a good quality of red fossil ore, the bed being three feet three inches thick, but displaying two shale and one knife edge slate parting. The analysis gives:

Metallic iron	47.650
Phosphorus .....	.197
Silica	20.870
Phosphorus in 100 parts of iron .....	.413

Of the Oriskany ores of the Big Stone Gap district and of the Valley down to Cumberland Gap, it is quite impossible to write in a way to satisfy the hopes, perhaps beliefs, of those interested, and at the same time stick to the text of absolute demonstrations. Along the line of the Ohio & South Atlantic construction approaching Intermont there are Oriskany outcrops twelve feet or more in thickness. Outcrop openings are being made, but of course, do not settle the question as to whether or not the deposit extends under cover into the mountain or not; or, if it do, how far? Doubtless the proprietors of the ore will hasten such work as would prove conclusive, and it should be undertaken vigorously and without delay. It does not require argument to prove that the Oriskany is a horizon with a good many presumptions against it. It is doubtless true that, exceptionally, it is the source of large deposits. That from which the Low Moor furnace draws its supply is frequently referred to, and indications at Cumberland Gap are reported to be far better than when we were on the ground eight weeks or more ago. At that point it is stated that a mass of this ore 27 feet thick (vertically) was encountered at something like 380 feet from the mouth of the test opening, other bodies having been gone through, of 16 feet on the outcrop, 5 feet and 12 feet—vertical width not given. It may be that the land of the Gaps is to prove a rich variation from the customary treacherousness and alluring but false ap-

pearance of Oriskany deposits, but it must take thorough and convincing local demonstration anywhere and everywhere to show it. So it is hardly worth while to build castles on any Oriskany ore not completely exposed as to its practical extent and character. It may be a giant resource, or it may be a very secondary or minor one. But it presents a problem that ought to be solved in the interest of the development of the Cumberland Mountain region. The American Association at Cumberland Gap deserves great credit for the enterprise it has shown in following the bed right into the heart of the mountain. It should appear to the advantage of others to take the same course.

In case the net results of the Oriskany happen to be as good as our Big Stone friends seem to expect, then there will be ample supply of ore for the foundation of a considerable local iron industry. An analysis reported from McCreath, will indicate the quality of sample drawn from these beds. They are presumably from the outcrop:

Metallic iron.....	52.556
Sulphur.....	0.037
Phosphorus.....	0.051
Insoluble residue.....	7.840

Professor Stevenson is quoted as reporting a bed of red ore near the Gap to show 4 feet 8 inches hard and 2 feet 6 inches soft ore. Another bed three miles from the Gap—probably one of the series visited—is reported to show from 47.65 to 49.43 metallic iron. I do not give the full analysis as I do not learn the name of the analyst on whose authority it is given.

The measure of importance which the Cranberry and other North Carolina and Tennessee ores will have in connection with the industrial evolution of Big Stone Gap will in some degree depend upon the results of a thorough exploitation of the Oriskany ores. But in any case, it is one of the leading ideas of the Big Stone people that their Gap is the place specially provided by Providence and nature for the purpose of turning magnetic Southern ores into Bessemer pigs, and later into Bessemer ingots, needles, locomotives, corkscrews, monkey-wrenches, and—money. It is an honorable ambition, and its realization would be a credit to the projectors, while it would reflect glory over Southern industry. To attempt to judge of its feasibility without having all the facts before us would be futile. For that reason it will be necessary to drop this part of the subject until the MANUFACTURERS' RECORD staff has had a chance to study the Cranberry and adjacent fields, when it will be recurred to with some remarks at that time upon any connection between these ores and those coking coals that may be suggested in the course of investigation.

GOLDSMITH BERNARD WEST.

Silk Culture In the South.

What promises to demonstrate that silk culture can be profitably followed in the South is the attempt now making at Loweryvale, Ala., by what is termed the S. R. & R. M. Lowery Industrial, Academy, Silk Culture Industry & Manufacturing Co., to show that the silk-worm can be made a potent factor in the prosperity of the future. The Lowerys are colored people who, for the past ten years, have devoted much attention to the management of the silk-worm. They are located at Loweryvale, near Birmingham, Ala. They invite the aid of forty industrious colored families to settle on one-eighth-acre lots at Loweryvale and engage in silk culture, the community to work upon the co-operative plan. Those wishing full information upon the Loweryvale experiment should procure a copy of the circular issued by its promoters. A large edition has been issued, and friends of the colored people might be induced to purchase it entire.

MIDDLEBOROUGH.

A Town Founded Upon the Rock of Industry

That Must Inevitably Become a Great and Flourishing Center.

[Spec. correspond'ce MANUFACTURERS' RECORD.]

MIDDLEBOROUGH, KY., Nov. 6, 1889.

There is so much to see and observe in this new and marvelous town that one, upon his first visit, cannot find or make time to put the results of his seeing and observing into words.

Middlesborough is, as yet, in the raw state, but at the present rate of progress it will be a thriving, busy city within a twelvemonth. Houses and other buildings are being started at the rate of thirty a day, so Mr. Arthur, the manager and projector of the place, tells me. New streets and avenues are being laid out and cut through, canals are being dug to bring the creek into subjection, swampy and hollow places are being filled in, whole hills have been condemned and contracts made to remove them; in short, nothing has been left undone which appears to be for the well-being of Middlesborough.

In talking with men on the trains and elsewhere I heard a great deal about the "boom" at Middlesborough, and in anticipation of seeing the place, I expected to see a regular "boom town" such as I saw in the West and in California three years ago. The only semblance this town bears to a boom town, however, now that I have arrived here and had an opportunity to see it and compare it to a genuine "boom" town, is in the architecture of some of its buildings. Outside of this, Middlesborough is in no way a boom town. A boom town is founded upon the sands, the prey to storms and winds, as we read of old. This town bears every indication of having been founded upon a rock, and when once fairly upon its feet and in trim to compete in the markets of the world in iron, steel and other products, it will be found sufficiently able to withstand the winds and storms of adversity and dull times.

Nature has done everything for this town, not only from an artistic point of view, but also from a practical point of view. Everything is at hand. I cannot better explain this than by comparing this town to a New York city residence, and many other towns to a rambling country mansion. In the New York flat every possible convenience for housekeeping is at hand. The housewife has no going up and down stairs, no running around the yard, and no carrying of water and coal. Everything is arranged with a view to economy of energy, time, space and money. In the country mansion there is economy in nothing, and the good housewife wears herself out in her endeavors to keep up with the progress of the world.

Middlesborough has the best of iron ores right at hand on one mountain side; on another mountain side is the best of coal for an abundance of coke; on still another mountain side is limestone; wood, stone, brick-making clay and other building materials are in abundance; fire-clay is in unlimited supply; in short, everything requisite to found a great iron-producing city is here. Middlesborough can manufacture iron and steel and not call upon the world outside of its surrounding mountain sides for anything. Why, then, can she not compete with the world in iron-making?

Energy, not materials, makes any city or town. Middlesborough has the materials. But has she the energy? The promoters of this place have built a fine railroad to connect their town with the world; they have tunneled the mountain at enormous cost; they have developed iron and coal properties, laid out a great town, and

in other ways carried on a great work that has cost them millions of dollars. They have not only laid good foundations, but they have laid them in such a way that they can add more and more stories to the superstructure. They are men who know a good thing when they see it, and in this investment they have found an opportunity of a lifetime.

Several men said to me, "I never heard of this town until you told us about it in the MANUFACTURERS' RECORD, and I hold you responsible for my being here." Said one: "You have talked so much about this place in your paper that I have come over here to establish a bank."

The MANUFACTURERS' RECORD need not tremble and fear that these men will fall back upon its hands. If they display half the energy and thrift that they have in the example of the management of the town, they cannot fail to succeed.

I have seen a great many towns North, South and West, but I never saw one that started out with better promise and on surer foundations than Middlesborough. It has every advantage, and no expense is spared to develop these advantages. The man who buys town lots here will not regret his investment, and the man who establishes a factory here, especially in the line of developing the metals, wood, clays, ochrous slates and other natural raw materials, will in the end be happier even over the results than will the investor.

H. L. ALDRICH.

Greensboro, N. C.

A few hours spent in this beautiful and prosperous place a day or two since, and our own observations enlightened by the kind interest of friends, suggest the sharing with our readers some of the pleasure and interest we enjoyed. And there is a source of real enjoyment in the freshness, brightness, beauty and animation that pervades a town, which, though quite old, seems to have drawn vitality from the fountain of perpetual youth; and except from the size of the shade trees and the maturity of shrubbery and the richly adorned flower gardens, bears the impress of a new town called into being by railroad impulse or influence. This freshness is largely due to the light clean soil which reflects back in softened tone the brilliancy of the sunlight; and the purity and dryness of the air preserves the paint with which every house is adorned in all its lively cheerfulness.

Greensboro is not a new town, relatively speaking, by any means, though post revolutionary in its selection as the county seat. Guilford county was created in 1770, and Martinsville, about six miles to the northeast, the first seat of justice. Near this place was fought the battle of Guilford. How long after the war it was when the removal of the courthouse was made we do not know; but it was done before the end of the 18th century, and the new town was named in honor of Gen. Nathaniel Greene, made doubly honorable by his distinguished prominence as the commander-in-chief of the Southern war, and as commander at the battle of Guilford.

The town must have grown slowly, for at the beginning of the late civil war it could not have numbered more than two thousand in population. But it was well known long before that as an educational center, its schools, male and female, being of high repute. It was known to the traveler as one of those few and far between places on the stage route—the only line of public travel—between Raleigh and Asheville, Hillsboro, Greensboro, Lexington, Salisbury, Morganton, the only towns in existence along that long distance. In 1856 the North Carolina Railroad, passing by Greensboro, was opened in its whole length from Goldsboro to Charlotte. It was for years the only road, and while making it more

easily accessible, had little good influence upon its prosperity; in truth, it lost much of its trade from the counties back of it, which was diverted to High Point, a new creation of the railroad.

It has now become an important railroad center. The extension of the Piedmont Road to Danville as a military necessity during the war led subsequently to its absorption by the Richmond & Danville Railroad Company, and the lease of that company of the North Carolina Road, and its consolidation with the great through system made Greensboro a very important point on that great line. The road built to Winston afterwards came under the control of the same company, and, instrumental in speedily making an active and populous manufacturing city out of the courthouse village Winston, acted forcibly upon the fortunes of Greensboro. Within the past two or three years have been added to its railroads the very valuable line of the Cape Fear & Yadkin Valley Road, with its south and northwest extensions, and all converging in the very center of the town, give vivid evidence of the importance to which Greensboro has attained. Of course we can only give a few details.

The impression is an agreeable and somewhat novel one. The passenger leaves his coach to find himself at once in the midst of a finished architectural effect rare in the vicinity of railroad depots. Elm street opens north and south, a fine broad avenue, once lined with fine elms, recently cut away to bring into full view the long lines of three-story brick stores, the architecturally striking McAdoo and Benbow hotels, the Federal and county courthouses and other fine public and private buildings, making north Elm street equal in beauty to any in the State. The stores are unusually elegant and capacious, surpassed nowhere, even by large cities, and this street from the depot to the courthouse has been solidly and smoothly laid with the Belgian pavement, while it is flanked with very broad sidewalks laid with bricks brought from Fayetteville, said to be the best known for such purpose. These streets, as also the public and private houses, are lighted with the arc electric light and also with gas. A stand-pipe is erected near the depot to supply the city with water for all uses. In case of fires dependence is had in this water supply in connection with a steam fire engine, a substantial house for which, of brick, has just been completed. We believe that the fire department also includes one or more chemical engines.

An important business, somewhat new, is done in tobacco, about two and a-half millions of dollars of leaf being annually sold. There are three sales warehouses and three plug factories, all large brick buildings, and Bevel & Scott are just completing a very large four-story building for a leaf factory. There are many other manufacturing establishments in the place, including a stove factory, three foundries, four or five sash and blind and wood-dressing establishments, a spoke and handle factory, etc.

The educational wants are well supplied. The Methodist Female College, with fine buildings and ample grounds, is in flourishing condition. The graded schools for whites and colored are admirably successful, and there is a negro college partly sustained by Northern aid which is doing well.

There are two leading hotels here, the Benbow and the McAdoo, both well kept. Of the former we can speak of personal knowledge. One admirable feature it possesses; all its rich, sweet butter and its abundant supplies of milk and cream comes from Mr. Benbow's dairy farm near the city, and also all his supplies of meat, beef, mutton and pork, his poultry, his fruits and his vegetables. Of this establishment we wish to speak another time, as also of another industry peculiar to the vicinity of Greensboro—the nursery business. At present we must defer it.

Greensboro has a population of about 7,000, and is evidently increasing.—The Daily Citizen.

IN THE "LAND OF THE SKY."

A New Town in Western North Carolina.

An Ideal Place Where "Life is Worth the Living" Even to a Dyspeptic.

[Spec. corresp'dence MANUFACTURERS' RECORD.]

CHARLOTTE, N. C., Oct. 29, 1889.

Some two or three weeks ago, while out upon a horseback exploring expedition of my own in the heart of the mountains of Western North Carolina, I came upon what seemed to me to be one of the most happily conceived enterprises of the day. It was the active work of building a new town, with many special features to make it different from most other new towns. I thought at the time of writing a description of it, but business and other matters of moment have prevented.

The new town of Linville has but recently attracted attention at the hands of the State press. Why? Because, I presume, the gentlemen who are managing the enterprise were not ready to inform the public of what they were doing or what they intended to do in the future. Silently, but none the less surely, have they been securing tract after tract of land, aggregating sufficient for any growth they can with reason calculate upon. This body of land lies in the heart of the most beautiful region of the country, and is likely to become a populous center.

Two or three years ago Mr. S. T. Kelsey, who, by the way, is a gentleman of large experience in building towns, having laid out Highlands, in this State, as well as several cities in Kansas, and who was for years forester of the Atchison, Topeka & Santa Fe Railroad, studying sections for their eligibility—this gentleman, in traversing the mountains to examine into the feasibility of running a railroad through their fastnesses, came to this spot. To him it seemed an elysium, for his practical eye at once took in its attractions. He at once went to moneyed friends and informed them of his opinions and plans. A company was formed and money paid in to commence extensive operations.

Saw mills were put in; a force of over one hundred men was employed in removing trees and stumps from the roadways of the tract which had been surveyed for the town; extensive parks were reserved and roads laid out to them; teams and scrapers were employed in grading; a good hotel was built to accommodate the first comers, and a livery stable commenced; a number of cottages were going up, with stores enough to supply the trade, and the work of evolution—changing an ancient forest into village, town, city, which will, in time, be famous—is going rapidly forward.

A driveway five miles in length has already been completed, winding around through the mountain at a gentle grade, so that a team can easily trot either up or down. This will probably be completed to Blowing Rock, fourteen miles distant, the coming year. This drive is undoubtedly as lovely a one as can be found in the country. Starting from the valley of the Linville river, which is here about 3,800 feet altitude, the road ascends gently along the side of the mountains, past deep ravines and under towering peaks and overhanging cliffs, while here and there a vista of nature's grandeur is opened up through the leafy branches of the trees. Along the lower slope of the Grandfather, the king of mountains, which raises its hoary head aloft 6,000 feet above the sea, bidding defiance to time and the elements, the acknowledged oldest mountain in America, the splendid roadway leads us, but here at its foot we must stop, for beyond all is wild forest, and nothing there of the road but the stakes of the surveyor with his cabalistic marks, but between

us and these stakes is a large gang of men who are fast making the civilized take the place of the uncivilized and the smoothly graded road the place of the rough rocks of nature. Stumps and trees are being removed, rocks blasted, ravines filled up and streams bridged. Thousands of dollars have already been spent upon this road, and thousands more will be put in its extension.

The Grandfather and Grandmother mountains are both owned by the company, which, by the way, is known as the Linville Improvement Co., with Mr. Hugh MacRae, of Wilmington, N. C., president and treasurer; Mr. J. C. Mellichamp, of Charleston, S. C., secretary; Mr. S. T. Kelsey, general manager, while the stock is held in Philadelphia, Boston, New York, North and South Carolina and among Mr. Kelsey's old friends in Kansas, who, knowing of his excellent success in the past, were anxious to take an interest in this, his last, though not by any means least, enterprise.

The town proper is laid out in the Linville valley, and has most excellent drainage, while the water supply, rising as it does up on the Grandfather mountain far above any point of what will even in the future be human habitation, is thus secured from any possible contamination, and the supply is large enough to furnish all necessary quantity for future use.

The valley at this point is wide and level, and seems to have been designed by nature for the very purpose to which the company has dedicated it. It is at a point where railroads passing through Mitchell county must necessarily make their junctions, and two or three are now in contemplation, though at present Cranberry is the nearest railroad point, ten miles distant; Lenoir is thirty-five, and Morganton and Hickory each in the neighborhood of forty.

There are now three saw mills at work, a planing mill and furniture shop, and no lumber sawed is to go out of the town of Linville. The company will not sell a foot that is not to be used in buildings in Linville, but for this purpose they will sell it at a very low rate, making it possible to build a home with far less money than at other points.

The company is spending thousands of dollars every month upon improvements, and all the property it has thus far attempted to sell is what has been called for by those who have heard of the enterprise through their friends. I believe now, however, the work is so far advanced that Mr. MacRae has made arrangements for the issue of an illustrated pamphlet which will be sent on application.

Prices have been placed at a reasonable figure, commensurate with the amount of work being done and the cash invested, but these low prices will not be held long; they will undoubtedly be advanced at an early day. The policy of the company is to advance prices as the improvements are made, and thus those purchasing now will have the advantage of that enhancement.

Looking off from some of the heights, range after range of mountains can be seen in the distance, fading away into misty uncertainty among the clouds, while before you and beneath your feet is the lovely valley of the Linville, with its pure sparkling waters winding their sinuous way through the meadow, among the trees, over rocks, and through deep and silent glades, anon to fall in a beautiful cascade, beating itself into a misty rainbow upon the rocks below.

This section of the country is a paradise for the angler; the artist finds here subjects worthy of his greatest skill, while the poet's soul is stirred with a sense of sublimity, and even the most dyspeptic misanthrope must here find some charm to raise the false veil which he has drawn over his perceptions.

When I visited there the first frosts of the autumn had thrown their beautiful scenic tints upon the virgin forests of Linville and all color!

"From the lightest tint of yellow
To darkest shade of green;
From soft and golden beauty
To sparkling silver sheen,

Had new crowned the oaks, the maples,
And the gently soothed pines,
While it touched, with softest color,
Close clinging ivy vines."

It seems to me that no more beautiful spot could have been selected, and accompanied by the beauty in the pure, bracing mountain air, which gives strength and vigor to the system and brings the roses back to the cheeks made pallid by living in the vitiated air of cities or low sections of country. It is hard, indeed, to imagine disease following one from its haunts to this section, where the air is so surcharged with life-giving oxygen. This is to be an ideal town and the work of building it is being planned with great forethought and carried out with much energy.

JOHN P. COFFIN.

George Westinghouse on Fuel Gas.

[George Westinghouse, Jr., in N.Y. Evening Sun.]

Your editorial notice concerning the fuel gas problem, in which you give me credit for a very valuable discovery, prompts me to ask for some of your valuable space.

A company with which I am connected, the Fuel Gas & Electric Engineering Co., Limited, has devoted about three years to the heating gas problem. The investigations have been carried sufficiently far to show that a new process for the manufacture of gas is not needed to bring its use for heating purposes within the reach of the many. Instead of the energies of the company referred to having been devoted wholly to processes for the manufacture of gas, the greatest attention has been given to the development of appliances for the use of gas, and already many devices have been perfected having such efficiency that their use in connection with ordinary illuminating gas will, when taking into consideration the saving of labor, dust and dirt, prove economical as compared with coal.

In the near future, when the illuminating gas companies make it a business to introduce economical devices for the burning of gas, it may be expected that the citizens of New York and other large cities will use gas very largely for cooking and other domestic purposes.

There is a simple device for the heating of water that ought to be in every household. By lighting a gas jet and turning on the water at the same time, water is boiled in about fifty seconds, and will run continuously at the boiling point at the rate of seventy gallons, with a consumption of about fifty cubic feet of gas per hour. There are roasting devices wherein the radiant heat of the gas is reflected upon the meats to be roasted, and the result is a saving of from 10 to 15 per cent. in the weight of the meat, which is lost by the present method.

Heated air prefers the top of the room, and thus leads to the consumption of a large amount of fuel in order to get a small amount of heated air upon the floor, where it is most needed. A European invention is so designed and arranged that about 50 per cent. of the heat is reflected upon the floor, so that at a distance of 10 to 20 feet from one of these contrivances set in an ordinary fireplace, the heat can be readily noticed upon the floor. Not only is the heat reflected upon the floor, but the heat in the products of combustion is utilized in warming the air in the room, which it puts in circulation. So economical is this stove that about 35 per cent. of the entire heat units contained in gas are made available, as against 10 per cent.

from coal grate fires. In all bed-rooms, and for heating in moderately cool weather, stoves of this character, from a sanitary point of view, would be worth their weight in gold, for in one minute after lighting the gas jets the reflected heat may be felt upon the floor.

In Europe, where a very careful investigation has been made in the interest of the company referred to, innumerable devices were found of more or less merit, and which were being largely introduced, because of the economical results, among a people who of necessity regard expenditures much more closely than the people of this country. It is known to a fraction of a foot how many cubic feet of gas are needed to broil a steak, to cook a bunch of asparagus, to boil a cabbage and to roast a pound of beef.

As soon as the people of New York and other large cities understand what has been done and are able to secure the necessary appliances, they will believe that the gas age has really come.

The present cost of manufactured gas is largely due to great percentage of leakage, and the comparatively small quantity of gas transported for an average of twenty hours per day. When a large quantity of gas is used for heating during all hours there will be no special need for a better process of manufacturing gas than the present, for the greatly increased consumption will lessen the price, and that, in connection with the economical appliances, will bring what is truly a great luxury within the reach of all classes. However, the importance of the manufacture of a cheap fuel gas is more fully recognized now than ever before, and there are hundreds of gas engineers to-day working on the problem, and there is every reason to expect that most excellent results will follow such persistent labors. The work begun three years ago on this subject is still being followed by people in my interests, though it is made of secondary importance at the present time, the first importance being given to the development of appliances for burning gas economically.

THE MANUFACTURERS' RECORD has frequently commented upon the very remarkable industrial growth of Florence, Ala., and the wide diversity of its manufacturing interests. To the many enterprises already in operation and under construction there is now to be added a \$500,000 cotton mill, which will probably be much the largest in the State. The arrangements for this mill have been fully completed, and contracts for the machinery and for the construction of the building are to be let at once. In addition to this great enterprise many others are being worked up, and a number are already definitely secured, though not yet made public. Philadelphia and New England capitalists have made heavy investments in the stock of the Florence Cotton & Iron Co. and in the land and stock of the Railroad & Improvement Co., and will make other liberal investments in new enterprises to be established there. Florence has apparently captured every investigator who has gone there to study its resources, and hence the very remarkable growth of the place. The history of this progressive town aptly illustrates the possibilities of the South, and the MANUFACTURERS' RECORD commends Florence to other Southern towns as an example of what can be done by united, persistent effort when backed by natural advantages.

LOW CAPITALIZATION ← → ON LARGE VALUES!

PECULIAR IN THIS RESPECT among all the great enterprises of the South is the

East Tennessee Land Company

CLINTON B. FISK, New York,
PRESIDENT.

A. W. WAGNALLS, New York,
TREASURER.

A. A. HOPKINS, New York,
SECRETARY.

FREDERICK GATES, Tennessee,
MANAGER.

Capital Only \$3,000,000, Covering 300,000 Acres

Of Land in Six Counties of East Tennessee, Mostly Contiguous, with over

250,000	Acres of Coal, Domestic and Coking; more than	40,000,000	Tons of Bessemer Steel Ore, the best known;
70,000,000	Tons of Rich, Red Hem- atite Iron Ore; at least	600,000,000	Feet of White Woods, Oak, Pine, Chestnut and other timber.

And Three Iron Mines in Profitable Operation.

This company, after months of patient prospecting and survey and the acquirement of the richest aggregation of Coal, Iron, Town and Farm Properties owned by any one corporation, has begun the establishment of

* HARRIMAN, *

A Valley City, the Industrial Center of all this vast area, with two great Trunk Lines of Railway running through it now, three other railroads centering toward it and certain to reach it soon, and others projected, radiating from it; THE NATURAL FOCUS of many hundred square miles of territory abounding in mineral resources and rapidly developing; with iron and coal and limestone all about it, and fairly within the city limits; with a navigable river flowing through it and bringing an abundant supply of purest water; occupying the most strategic position for manufacture and transportation, hitherto undeveloped in the entire South; and of

* DEERMONT, *

An Uplands Town, on the Cumberland Plateau, 2,000 feet above sea level, in a superb climate with a magnificent outlook, surrounded by an AGRICULTURAL REGION of unsurpassed beauty and opportunities, and sure to be the favorite health resort of all the South, where malaria is unknown and yellow fever impossible; where the days are

radiant and the nights forever cool, and under BROAD PLANS OF COLONIZATION, and with a liberal policy of improvement, will soon open up both these to public approval. Meanwhile half a million dollars of the unsubscribed stock of the company is offered for sale, at par, in shares of \$50.00, twenty per cent. down, and the balance in monthly payments of ten per cent. This stock is non-assessable, and purchasers assume no liability whatever. It is not of the inflated, balloon order, but BASED ON SOLID VALUE. It is made receivable by the company, at par, in payment for farm lands or city or town lots, with such a discount upon these as will give, until July 1st, 1890,

Every \$100 of Stock the Purchasing Power of \$133.33 Cash.

With the ample working capital of the company expended in judicious improvements, with the industries established that are now in contemplation, with the settlement assured and the broad plans of the company made widely known, the property this stock represents will become worth \$6,000,000 inside the first year.

Subscription receipts will be given by the treasurer for all payments, and stock certificates will be issued when shares are paid for in full. Every order for stock must authorize the secretary to subscribe for the same, on behalf of the purchaser, upon the company's books.

Make all drafts, checks, etc., payable to the order of A. W. WAGNALLS, Treasurer, but send these and all communications, to

A. A. HOPKINS, Secretary,

96 BROADWAY, NEW YORK.

SOME SPECIAL CLAIMS POSSESSED BY LIBERTY, VA.

TO THE FAVORABLE CONSIDERATION of all classes of prospectors, whether for homes, for investment of capital, for health, or for business enterprise. With the ensuing scholastic year will be opened the superb building of the Randolph Macon Academy, of which a cut is herewith presented. This institution is built for the thorough culture of boys—mental, moral and physical—is under the efficient management of Prof. W. W. Smith, LL.D., president of the Randolph Macon College at Ashland, Va., and has been constructed regardless of cost, to secure every condition essential to the successful attainment of its objects according to the most approved modern standards. Such another educational institution does not exist in the broad limits of the Southern States. In addition to this two handsome Female Academies, constructed upon the same intelligent, liberal and progressive principles as the Randolph Macon Academy, will be built during the coming year, and, if possible, receive pupils in September, 1890. Besides these, Liberty already possesses

shipping facilities and all the climatic, social, sanitary and pecuniary conditions requisite to the retention of skilled artisans once engaged in their employment. The manufacturers of tobacco, woolen goods, etc., already established here have found the local advantages so great that they have refused every inducement offered them to move to other points.

Every reasonable concession will be made to parties seeking locations for the establishment and operation of manufacturing plants, and upon application to the undersigned specific information will be furnished as to all details, both regarding the natural merits of the location, the character of raw materials within easy access and the terms offered to *kona side* prospectors for sites.

Few better opportunities have been offered investors in Southern properties than the lands immediately adjacent to Liberty—lands possessing the intrinsic merit of natural fertility and productiveness in addition to close proximity to an embryo city,



the usual quota of public and private schools, for which progressive Southern towns are noted.

These institutions insure an intellectual and moral tone in its society to the residents of Liberty that must give it pre-eminent attractions over mere manufacturing centers to the best class of settlers.

As a special recommendation to investors, Liberty possesses all the advantages of close proximity to the ore beds and coal fields of the famous mineral region of Southwest Virginia, is the county seat of Bedford, itself an unexplored mine of mineral wealth, representing granite, limestone, steatite, kaolin, the hematite and magnetic iron ores, asbestos, mica, graphite, mineral paints, fire-clay, &c.

Manufacturers would find here, within easy access and at low cost, all the raw materials used in their business. Cheap labor in great abundance, cheap fuel, excellent

blessed with all the elements essential to steady and permanent growth. Some of these lands are already in the hands of improvement companies and have been laid out in beautiful, wide, shady avenues and divided in lots to meet the requirements of those desiring to build or to invest on a modest scale.

Liberty invites the closest scrutiny of its claims and does not require to indulge in extravagance or deception. Its growth is inevitable. With a superb climate, grand and imposing scenery, a surrounding country of great productiveness, invigorating mountain atmosphere, an unlimited supply of the purest free-stone water, unsurpassed healthfulness, good society and the finest schools for both sexes, enterprising and successful manufacturers, close proximity to the markets of the world, cheap labor, cheap lands, excellent shipping facilities; it lacks nothing but more people to make it a model city.

For Information address { J. LAWRENCE CAMPBELL, Secty. Liberty Improvement Co.
R. KENNA CAMPBELL, Manager Longwood Park, Va.

200,000,000 TONS OF BROWN IRON ORE

IN SIGHT AT

BLUFFTON,

HIGH, HEALTHY AND HONEST.

GOOD PEOPLE AND GOOD WATER.

Cherokee County, Ala.

It is impossible to describe by words the enormous quantity of iron ore that is in sight on the land of this company. Said a prominent railroad man of the South: "I could not believe your statement as to the quantity, (200,000,000 tons in sight), but now that I have seen your ore deposits, I wonder how you put so low an estimate on them."

Prof. Robinson, of Bowdoin College, Brunswick, Maine, says: "I found at Bluffton iron ore in abundance, partly in solid cliff masses containing hundreds of thousands of tons, and partly in the form of gravel and small boulders lying in great banks similar in appearance to the gravel banks of New England. Whether there was as much of the gravel as of the bluff ore I could hardly judge, but it was very clear that the quantities of both were simply enormous."

G. S. Patterson, mining engineer, of Anniston, Ala., reports: "The amount of ore in sight was certainly beyond my expectation, though I was prepared to find a large deposit. The Bluff, as it is called, is a solid mass of ore on the side of a mountain, easily approachable, and can be mined cheaper than at any point in Alabama or Georgia, with which I am familiar."

Mr. Wm. H. Edmonds, of the Manufacturers' Record, says: "As to

the quantity of ore here, I don't suppose that all the furnaces in Alabama could use it up in a lifetime."—See Manufacturers' Record May 18, 1889, article entitled "BILL ARP AND BLUFFTON."

Ore can be delivered at furnaces built here at a cost not exceeding 50 cents per ton.

With high grade ores, analyzing over 50 per cent. metallic iron, delivered at the furnace at the above-named price, is there any possibility of such a place as Bluffton not being able to produce iron at figures which will yield a profit despite the dullest of dull times?

Prof. J. H. Pratt, of Birmingham, Ala., reports on samples selected from our property by Mr. Edmonds and Mr. G. S. Patterson as follows:

The sample of brown iron ore, The sample marked "Gravel Ore" contains—

marked "Bluff Ore," contains—

Metallic iron, - - 52.37 per cent. Metallic iron, - - 53.23 per cent.

Phosphorus, - - 0.782 " Phosphorus, - - 0.931 "

Silica, - - - 14.60 " Silica, - - - 6.25 "

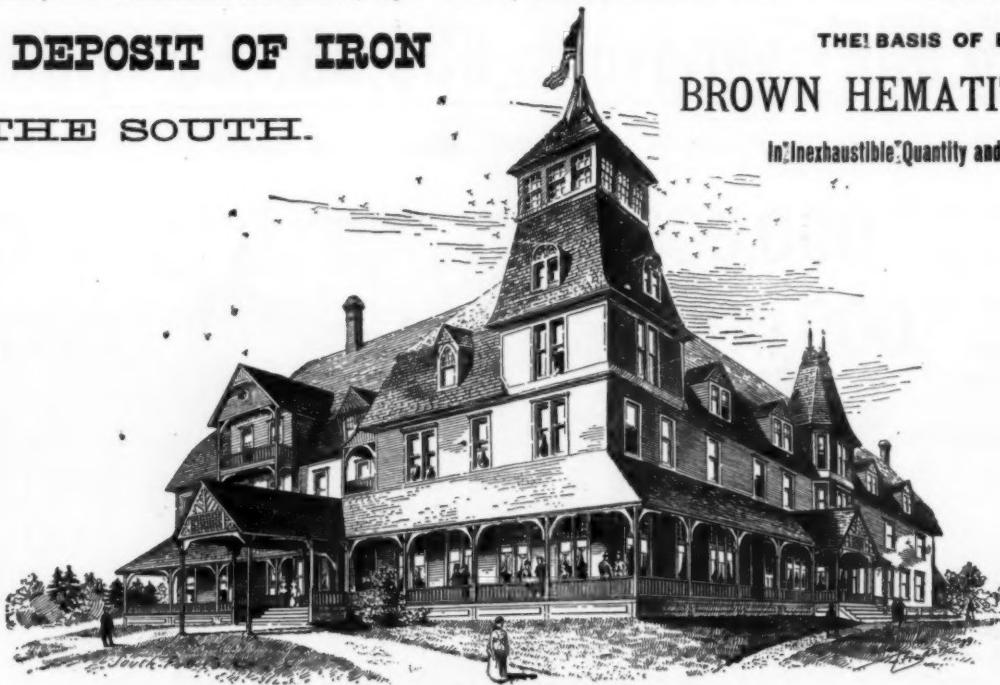
Water combined, - 8.10 " Water combined, - 10.20 "

Moisture at 100° C - 2.50 " Moisture at 100° C - 1.68 "

LARGEST DEPOSIT OF IRON

IN THE SOUTH.

Ore can be delivered at furnaces built here at a cost not exceeding 50 cents per ton.



THE SIGNAL—NOW OPEN AT BLUFFTON.

BROWN HEMATITE IRON ORE

Inexhaustible Quantity and Excellent Quality.

Located on the Selma Division of the East Tennessee, Virginia & Georgia Railway, midway between Rome and Anniston, and only two miles and three-fourths from the East & West Railroad, of Alabama.

FREE MANUFACTURING SITES.

Rich Manganese Deposit.

There are several very large and rich outcroppings of Manganese Ore on the company's property, and the deposits have been examined by experts and pronounced exceedingly valuable. Specimens have been sent to various steel works in Pennsylvania, and the result is a large inquiry about the ore. From present development can be seen several hundred tons of this ore. There is always a ready market for manganese, and it is quoted at \$18 to 20 per ton in Pittsburgh and Chicago. More extensive work will be done on these deposits within a very short time, as the banks are easily accessible. Shipments will soon be made.

OTHER RESOURCES.

Fire Clay and Brick Clay—Yellow Ochre.

On this property are large deposits of fire clay, which has stood the highest test. Shipments have been made to Chattanooga, Tenn., and it is pronounced a superior quality. A fire brick works could be established here that would prove extremely profitable.

In brick clay there is an inexhaustible quantity, with an abundance of water running through the clay land. Brick manufacturing here would pay handsomely, and the company would lease the clay beds for a term of years at a very low royalty.

The four charcoal pig-iron furnaces surrounding this property are nearly as valuable to this place as if they were located on the land of the Bluffton Company. The pig iron manufactured by them could be bought and utilized here for every kind of manufactured iron. They are so near that freight on the raw material would be comparatively nothing. Surrounding us, as these furnaces do, it makes Bluffton a centre.

SEND FOR PROSPECTUS. ADDRESS

Bluffton Land, Ore & Furnace Company, Bluffton, Ala.

FORT PAYNE, Alabama.

★ COME TO ★

The NEW ENGLAND CITY of the South.

Climate Unsurpassed. Abundance of Pure Water. Drainage Excellent.

No Better Point in the Union

For Safe and Profitable Investment.

Situated on the MAIN LINE of the QUEEN & CRESCENT ROUTE, fifty-one miles Southwest of Chattanooga, and ninety-one miles North of Birmingham.

Elevation is from 895 to 1,600 ft above the sea, and above fever districts.

DeKalb County is entirely free from debt; taxes light.

Most liberal encouragement given to industries of every kind.

Iron Furnace and Rolling Mill will be constructed immediately, and other industries of various kinds are under contract.

Correspondence solicited from those who contemplate coming into the South to establish any kind of manufactories.

The different industries will employ at least two thousand skilled workmen, which will secure a population of over ten

thousand, independent of the many industries contemplated.

Iron of the best quality can be manufactured at as low cost per ton as in any other locality in the South.

Coal and iron are being developed rapidly of a superior quality.

Fine timber abundant and wood-working machinery of every kind can be profitably employed at this point.

The Company is prepared to give every reasonable encouragement to manufacturers who will locate at this point.

☛ Correspondence solicited.

CAPITAL \$5,000,000.

OFFICERS.

President, - - - - -	COL. J. W. SPAULDING
First Vice-President, - - - - -	HON. D. H. GOODELL
Second Vice-President, - - - - -	HON. HENRY B. PEIRCE
Secretary, - - - - -	C. L. T. STEDMAN
Treasurer, - - - - -	F. H. TOBEY
Manager, - - - - -	C. O. GODFREY

BOARD OF DIRECTORS.

HON. D. H. GOODELL, of Goodell Mfg. Co., Antrim, N. H.
HON. HENRY B. PEIRCE, Secretary of State of Mass.
GEN'L SELDEN CONNOR, Ex. Gov. of Maine, Pres.
Northern Banking Co., Portland, Maine.
COL. J. W. SPAULDING, Ft. Payne, formerly of Portland, Me.
HON. F. G. JILLSON, Providence, R. I.
HORATIO ADAMS, Boston, Massachusetts.
W. J. CAMERON, Pres. First Nat'l Bank, Birmingham, Ala.
COL. JOHN B. BODDIE, Birmingham, Ala.
W. P. RICE, Pres. Union Investment Company of Kansas City, resides Fort Payne, Ala.

FORT PAYNE COAL & IRON COMPANY, Fort Payne, Ala.

DENISON, TEXAS.

The "Yankee" City of the Southwest,

— AND —

* GATEWAY *

— TO THE —

GREAT STATE OF TEXAS.

The City of Denison presents the Finest Opportunity of any City in the Southwest for the Investment of Capital in Large or Small Sums.

DEНИSON is situated in Northeastern Texas near inexhaustible beds of coal and iron, surrounded by the finest fruit lands in the world, and adjoining the INDIAN TERRITORY, which, in the nature of things, must in a few years be opened to settlement.

The growth of Dennison has been a natural one, the city having reached its present size—16,800 population—in sixteen years.

The city is regularly and beautifully laid out. Railroads run from it in four different directions. The Missouri, Kansas & Texas alone does an enormous business, having 54 miles of switch track in Denison, employing 500 skilled workmen and disbursing \$150,000 a month in wages.

The first public school in the State was established here, and the city's elegant two and three story brick school buildings, surrounded by attractive grounds, are well arranged for the use of the white and colored children. Its schools are in session ten months in each year.

We have sixteen church societies, seven of which are colored.

The city is well supplied with pure water from its numerous private wells—dug in the ground—and its first-class system of water works, giving the citizens ample protection against serious loss by fire, and enabling the insurance companies to rate the city first class as to fire hazard. Rate of taxation low.

The city has four miles of street railway, with six miles now building to be operated by steam motor; has two electric light companies and a telephone plant. It has an influential New England colony, and counts among its citizens people from every State in the Union.

A large hotel, to cost \$125,000, is to be erected here this year, and a large steel plant with \$2,000,000 of capital is contemplated.

30,000 bales of cotton were shipped from Denison in 1888. 200,000 baskets of strawberries and several carloads of peaches and other fruits have been shipped to market this season.

The Denison Canning Co., capitalized at \$100,000, has just been organized, and ground has been broken for a large fruit and vegetable canning factory.

A cotton mill company is being formed with a capital of \$500,000. Denison citizens have subscribed \$150,000 to this enterprise; Eastern capitalists will add \$350,000.

The climate of Denison is magnificent, situated nearly 800 feet above sea level. In summer it is warm, but far cooler than many cities farther North, and from 6 P. M. until after sunrise it is always cool. The city is very healthy.

The capacity of the ice factory is being increased from a daily output of 15 tons to 30.

The Denison Land & Investment Co. is prepared to give every reasonable encouragement to manufacturers, and solicit correspondence from such manufacturers as contemplate coming into the Southwest to locate.

Address all communications to

THE DENISON LAND & INVESTMENT COMPANY, DENISON, TEXAS.

Paid-Up Capital, - - - - - \$1,200,000.

OFFICERS:

W. P. RICE, President.

MILTON H. FRENCH, Vice-President and General Manager.

ARTHUR L. BERRY, Secretary and Treasurer.

DIRECTORS:

W. P. RICE,
J. M. FORD,
A. R. COLLINS,

Kansas City, Mo.
Kansas City, Mo.
Denison, Tex.

B. J. DERBY,
PAUL LANG,
M. V. B. CHASE,

Burlington, Vermont.
Oxford, N. H.
Augusta, Maine.

MILTON H. FRENCH, Thomaston, Maine.
A. H. COFFIN, Denison, Texas.
JOS. B. LINCOLN, Boston, Mass.

Morristown, Tenn.

The Plateau City of the Great Valley of East Tennessee

is beautifully located on a plateau of Bay's Mountain, about equi-distant from the Cumberland Mountains which bound East Tennessee on the northwest, and the Alleghany Mountains which bound it on the southeast, and is 300 feet above Holston River, which washes the north base of the plateau three miles from the city. Its mean elevation above sea level is about 1,350 feet, while the hills and mountains immediately surrounding it rise to an altitude of 1,935 feet, affording views of surprising extent and grandeur, and at the same time so modifying the temperature that the thermometer rarely registers higher than 90° in summer or lower than 10° in winter. *Its drainage is admirable, and malaria is unknown. It has nearly trebled its population since 1880, having now about 4,000 inhabitants.* It is the commercial and business center of the richest and most extensive agricultural district in the State, where all the cereals and all the grasses

and tobacco are grown to perfection, and where fruits and berries abound. It has hundreds of thousands of acres of uncultivated forests accessible to it, abounding in Poplar, Pine, Hemlock, six varieties of Oak, Chestnut, Hickory, Cedar, Maple, Birch, Beech, Sycamore, Gum, Locust, Laurel, Buckeye, Mulberry, Ash, Cherry and Walnut. *The Celebrated East Tennessee Marble underlies a part of the city, and it is surrounded with rich deposits of Iron Ore, Manganese Ore, Zinc Ore and Lead Ore.* It has been said by one who has made a study of the subject, that within a radius of 50 miles around Morristown *every variety of iron ore in the United States can be duplicated, and a coke can be made equal to Connellsville coke.* We claim without hesitation that Morristown has in its immediate vicinity richer mineral ores, and a greater variety of them, than any city on the Continent.

MORRISTOWN

has Railroad Facilities equal to any city between Lynchburg and Chattanooga, and they will be speedily increased by the completion of the Carolina, Cumberland Gap & Chicago Railway, making the shortest possible railway route between the great cities on the Ohio River, Cincinnati and Louisville, and the seaboard cities, Charleston, Port Royal and Savannah. Besides, the Baltimore & Ohio Railway will probably extend a branch to it from Lexington, Va., and the Tennessee Midland will in all probability be built to Morristown, and a line be built giving direct connection with Atlanta.



MAP SHOWING RELATION OF MORRISTOWN TO THE COUNTRY AT LARGE.

It is lighted with electricity, and has water works under contract, and is now inaugurating a system of street railways. Its climatic advantages, its unsurpassed record for healthfulness, its abundance of pure water, its central and beautiful location, its transportation facilities, its fruitful agricultural surroundings, its contiguity to rich and exhaustless fields of iron, manganese, zinc and lead ores, marble, coal and timber, mark it as a place destined to be the commercial, manufacturing and railway emporium of Upper East Tennessee, Western North Carolina and Southeastern Kentucky.

To expedite this destiny the city authorities have wisely *exempted from taxation for ten years all manufacturing establishments* that will give employment to fifteen or more persons, and the county authorities have done the like, so that manufacturing establishments will be exempt from all taxation for ten years, except the merely nominal tax for State purposes. There has been no "boom" or inflation of prices at Morristown, and, as it possesses within itself and contiguous to it almost every element of wealth, it now presents the most inviting field for investment of any city in the South.

Persons who may desire fuller information can obtain it by calling on or addressing

MONTVUE LAND COMPANY

POSTOFFICE BUILDING,—MORRISTOWN, TENNESSEE.

RANDOM NOTES ABOUT THE "MODEL CITY of the South."

THIS is the title bestowed upon Anniston, Alabama, at its beginning by persons who were impressed by the provisions its founders had made for the comfort and health of its future population, and the farseeing wisdom and judgment that entered into all the plans for its development. And it has amply maintained its right to the title. It has always been as its originators designed it should be—a model in every respect. This idea was incorporated in its foundation, and has been a part of its growth up to the present time.

Anniston is a town of about 12,000 inhabitants, and its population is rapidly increasing. Its numerous industries employ about 6,000 men, and pay out over \$60,000 a week in wages. It is one of the most beautifully located towns in America. Travelers who have visited it say that no more attractive site for a city could be found anywhere in the world. It is clean, sober, moral and healthful. It has churches, schools, water works, electric lights, gas, well-paved streets, handsome stores, fine residences and all the conveniences and attractions of a modern, well-appointed city. It is the industrial and commercial center of one of the richest iron districts in the world. It is surrounded by a splendid agricultural country. It has unsurpassed advantages for the manufacture of everything into which wood and iron enter. It possesses every attraction needed to make it a delightful place for a home or a health resort.

The one remark most frequently made in regard to Anniston is that it is a "solid town," and this is probably its most noteworthy feature. It has had no sudden, fictitious growth, no abnormal development, no unnatural stimulation to be followed by reaction and succeeding depression. Its development has been on a substantial and permanent basis. Manufacturers have been drawn here by the superior quality of Anniston iron, the abundance and cheapness of timber, and other natural advantages, as well as by its attractions as a place for a home. Its facilities and advantages as viewed from the standpoint of business are supplemented by its delightful and invigorating climate, its unsurpassed healthfulness and the beauty of its surroundings.

The following are analyses of the ores used by the Woodstock Iron Co.:

"REED'S BANK" ORE.	"SILVER CREEK" ORE.
Metallic iron	60.02
Phosphorus . . . . .	.08
<hr/>	
"WASHER BANK" ORE.	
Metallic iron	55.53
Phosphorus . . . . .	.06

There is one peculiarity of Anniston that is very strong in its favor—the fact that the larger part of the manufacturing capital invested here is local capital. The founders of the city didn't simply buy up some thousands of acres of land and then say to the world, "come and take advantage of the unexampled opportunities we offer, buy our stock, buy lots from us, establish manufactures." They first showed their faith in Anniston's advantages by investing here their own money. They built the furnaces, the cotton mill, the car shops, the car-wheel works, the water works, the Anniston & Atlantic Railroad, the Anniston & Cincinnati Railroad, etc. They built the splendid pipe-works plant that has just gone into operation, and the two new furnaces about to go into blast. As fast as they made money they have invested it right here.

Anniston is blessed with a delightful and healthful climate. It is never cold—the most delicate persons can spend the greater part of the time out of doors the year round. In summer the climate is not such as to debilitate and weaken, as is the case in the North and in less elevated localities in the South. The thermometer registers less heat, and even the same temperature is far less apprehensive here than where the percentage of humidity is greater. Its location in the mountains ensures an unfailing breeze, and no matter how warm it may be in the sun through the day, the nights are always cool. The climate seems particularly suited to those who are troubled with throat or lung diseases. A physician living near here, who had suffered for years with a severe bronchial trouble, states that he had lived in Southern California, Colorado, Florida, at Aiken, S. C., and in the South of France, and that the climate of none of these places did him as much good as that of Anniston has done. There are persons here now in vigorous health who believe they would not be living but for their removal to Anniston.

Mr. Albert Howell, of Atlanta, said recently in an interview in the Atlanta Constitution: "Anniston is the coming city. I was there last week. You cannot conceive the bustle and business of that wonderful city. Homes are being built as rapidly as possible, but the city has outgrown itself, and two thousand residences, if they were started at once, would be rented before completion. The other cities may blow and bluster, but Anniston is building, and in ten years will be the best city in Alabama. You mark this prediction."

INFORMATION ABOUT ANNISTON, MAPS, PROSPECTUSES, &c., &c., MAY BE HAD FROM THE

ANNISTON CITY LAND COMPANY, Anniston, Ala.

SOME FACTS ABOUT FLORENCE, ALA.

Florence is in North Alabama, near the Tennessee line, on the Tennessee river, which is navigable here for large steamers. It is on the Memphis & Charleston Railroad, and the Nashville & Florence branch of the Louisville & Nashville Road.

* * * * *

There are many other places in the South possessing the advantages of a good climate, healthfulness, natural resources and manufacturing capabilities more happily combined and in a higher degree than can be found in any other part of the country. It is believed, however, that at no point in the South, and hence nowhere in America can there be found an aggregate of so many unsurpassed advantages and attractions as exist at Florence.

* * * * *

Florence can make iron as cheaply as any place in Alabama. It has facilities for the manufacture also of cotton goods equal to those of any other place. Anything that uses wood as a raw material can be made here at as low a cost as anywhere in the South.

Thousands of acres of iron ore of a high grade within a few miles of Florence are owned by Florence companies. Limestone is quarried within the town limits. There is enough of it to last for ages.

Cotton mills would get a large part of their supply from the country around Florence. Cypress creek furnishes water power and mill sites enough to make Florence the Lowell of the South.

North of Florence, and up the Tennessee river, there are large areas of timber, embracing a wide variety of hardwoods—forests that the ax has never touched.

* * * * *

Besides its industrial possibilities, Florence is a point of great commercial importance, and could be made the center of an enormous mercantile business. It has the advantage of both rail and river transportation and of competing railroads. Certain railroad movements are in progress now that will give it direct communication in every direction and by different lines.

Florence is surrounded by a wide extent of fertile and productive country, as well adapted for farming, stock raising, fruit growing, truck farming, dairying, &c., as any in the world. Further, it has a climate that is delightful the year round. Its health record cannot be surpassed. It has no malaria. In fact, people who live here enjoy a remarkable exemption from ailments of every sort. It has an abundance of the purest water.

* * * * *

For beauty of location Florence is without a peer. The Tennessee river at this point is as romantic and beautiful as the Hudson. The rolling character of the country, the slopes and hills and alternating valleys furnish a picture to charm an artist's eye. The lovely Cypress creek, a deep and rapid stream emptying into the river just below the town, presents at every turn in its tortuous course a scene of entrancing beauty. The views from some of the higher hills are as fair as the eyes of man ever rested on.

* * * * *

Florence is making more rapid progress, proportionately, than any other town in America. This is a strong statement but it is true. And its growth is on a solid and permanent basis.

* * * * *

Florence is not undergoing any wild real estate boom. Its managers are not seeking to advance real estate prices. It is not their plan to get a quick return for the money they have invested, by the rapid sale of lots at unnatural prices. It is their aim to first build up a town, to locate factories and secure a permanent population, when land will have an actual value and sell at prices from which there will not be a subsequent disastrous reaction. At present real estate is much lower in price than in any other town in the South that has made half the progress Florence has made.

* * * * *

Since the first of September, 1888, over 25 industries have been located at Florence, with an aggregate cash capital exceeding \$2,000,000. This remarkable growth is the result of efforts to induce people to simply investigate the attractions of Florence. Investigation and comparison with other places, on the part of any who are looking for a place in the South to locate, will in nearly every case result in the selection of Florence.

* * * * *

The following are some of the industries in Florence. Some of these are in operation; others are nearly ready for work and others have but recently commenced work on their buildings: A furnace about ready to go into blast, and another partly constructed; a stove factory; a hardware company, with a capital of \$300,000 to manufacture fine building hardware, &c.; a wagon factory, with capital of \$150,000; an agricultural implement works; a handle factory; a woodenware factory; a sash, door and blind factory; a cedar bucket factory; a pump factory; planing mills; a factory to make wooden butter plates such as grocers use; a flour mill; a cotton mill; a jeans factory; a gingham factory; a woolen mill; a cotton gin; a marble company; a roofing and paint company; a shoe factory; a suspender factory; a compress, packet and ferry company; three building and loan companies; a canning factory; several brick factories; a dummy railroad company, and several other enterprises.

* * * * *

The aggregate capital of the industrial, mercantile and development enterprises in Florence exceeds \$15,000,000.

A year ago the population of Florence was 2,000. It is now more than 8,000. There are more than 1,100 carpenters at work in Florence and they can't build houses fast enough to keep up with the increase in population. Before the first of January next there will be 15,000 people living here.

* * * * *

Limited space allows here only the briefest summary of a very few of the more important facts about Florence. For more detailed information write to any of the following companies. Or better still, come down and see for yourself. Investigation is all that Florence asks or needs.

Railroad and Improvement Co.

Lauderdale Manufacturing Co.

Cotton and Iron Co.

Florence Investment Co

MIDDLESBOROUGH

AND

CUMBERLAND GAP.

The Future Iron ^{and} Steel Center of America.

THE PASSAGEWAY FOR RAILROADS BETWEEN THE WEST AND THE EAST.

A SOURCE OF COKE SUPPLY FOR THE SOUTH AND WEST.

The Furnaces and Factories already assured will make it one of the largest manufacturing towns
in the South.

NEW INDUSTRIES

Being rapidly added to those already in operation and contracted for.

COAL, IRON, TIMBER AND OTHER RAW MATERIALS.

Abundant Water for all Manufacturing Purposes.

WATER FROM PURE MOUNTAIN STREAMS FOR DOMESTIC USES.

DELIGHTFUL AND HEALTHFUL CLIMATE.

Surrounded by Valleys of Rich and Productive Farm Lands.

SEND FOR CIRCULARS, PROSPECTUS, MAPS, ETC., TO

ALEX. A. ARTHUR,

General Manager, Knoxville, Tenn.

JOHN M. BROOKS,

Resident Manager, Middlesborough, Ky.

Southern Railroads.

E. T., Va. and Ga.'s Year.

Probably the most striking evidences of the South's prosperity are afforded by the reports as to earnings and expenses of the great Southern railway systems during the business year just closed. We have already referred to the great increase in the business of the Georgia Central, Louisville & Nashville, Chesapeake & Ohio, Cincinnati Southern and connections and other Southern railway systems, all of which routes are now and have been taxed to meet the demands of travel and transportation. The annual report of President Thomas, of the East Tennessee, Virginia & Georgia System, just submitted, emphasizes the record of Southern activity and progress. According to the report the total mileage of the main line and branches operated during the year just closed is 1,067.1. The gross earnings amounted to \$5,301,624.25, and the general expenses to \$3,374,665.94. Net earnings, \$1,926,938.3; minus taxes, \$1,793,014.40. The net earnings per mile of road operated were \$1,805.79. \$191,706.31 represents the increase in revenues as compared with the returns of the very prosperous season of 1887-'88. \$2,500,000 of \$6,000,000 improvement bonds have been sold. Trackage, rolling stock and terminal facilities have been improved, and the progressive policy inaugurated will be continued as far as practicable. The East Tennessee, Virginia & Georgia, with its strategic branches and connections, now constitutes a veritable backbone railway system from the Potomac to the Gulf of Mexico, and the prosperity which it exhibits is one of the best possible proofs of the general and steadily growing welfare of the South.

THERE are nine counties in the Northern part of Arkansas, having an aggregate population of about 110,000, which are not touched by a single line of railroad. It seems a little remarkable that in this day of progress such a large territory, with such an aggregate of population, should be absolutely without railroad facilities. There must certainly be a chance in that section for some profitable railroad building.

EX-GOVERNOR CHAMBERLAIN, receiver of the South Carolina Railroad, has been authorized by the court to put the road in thorough repair, replace worn track with steel rails, etc. This will prove of great interest to the people along the line.

BUILDING RAILROAD—FORT WORTH, TEXAS, November 9, 1889.—Messrs. Mallory, Cushing & Co., of Omaha, Neb., have contract for 100 miles of the Fort Worth & Albuquerque Railway from Fort Worth in a northwesterly direction. This line opens up a splendid new country, rich in coal, iron and other minerals, salt, gypsum, &c., and a fine farming country.

CHAS. C. BLACK, Pres.

An Important Railroad.

[Spec. corresp'dence MANUFACTURERS' RECORD.]
SALISBURY, N. C., Nov. 12, 1889.

The Yadkin Railroad, already mentioned in the MANUFACTURERS' RECORD as to be built, is to run from Salisbury to Norwood in Stanley county, 40 miles. Surveys begin this week, and the work of construction will commence early in December. The directors are Sam'l. H. Wiley, Theodore F. Kentz, V. Mauny, Wm. Smithfield and Sam'l. Pemberton. The officers are T. F. Klutz, of Salisbury, president; V. Mauny, of Milledgeville, N. C., treasurer. The contract for the 40 miles has been let. The road will pass through the famous gold, silver and copper veins of Rowan county, and through a range of granite said to be equal to any in United States. It will follow for several miles, substantially, the Yadkin river, which from Salisbury to the South Carolina line will yield over 100,000 horse-power. There are slate quarries in Stanley county that are said by competent experts to be equal in every way to those of Buckingham county, Va. The road will traverse areas of original forests, and there will be tributary to it thousands of acres of the finest long-leaf pine, of oak, hickory, dogwood and persimmon. It will also make accessible quarries of fine brown sandstone, and of the widely-known North Carolina mill-stone grit, which makes buhrs equal to the French. The road will make important connections West and South. Among other results that will be accomplished, it will render possible the utilization of the hundreds of thousands of dollars now locked up in the pyrite, gold and copper mines of Rowan county. These ores are refractory, and cannot now be profitably handled. This road, however, will place them in close connection with the South Carolina phosphate rock, with reduction works to extract the sulphur from the ores and use it in the manufacture of sulphuric acid, with which to treat the phosphate rock. On the fertilizers thus produced, and on other by-products there would be sufficient profit to reduce the cost of handling the ores to a very profitable basis.

THE New York Equipment Co., it is stated, has a contract from the Montgomery, Tuscaloosa & Memphis Railway Co. for the equipment of the road. There will be seven eight-wheel locomotives, valued at \$8,500 each; eight ten-wheel locomotives valued at \$9,000 each; eight first-class passenger cars, valued at \$4,500 each; six second-class passenger cars, valued at \$4,000 each; five baggage, mail and express cars, valued at \$3,100 each; five cabooses, valued at \$900 each; 200 flat cars, valued at \$325 each; 150 box cars, valued at \$440 each; 100 gondolas, valued at \$500 each. The total value of the equipment contracted for is \$381,500. By the provisions of the contract the locomotives are to be built at Dunkirk, N. Y., the passenger equipment at Hegewisch, Ill., and the freight cars at either Anniston or Decatur, Ala. The contract requires that all the equipments shall be first-class and furnished with latest improvements.

IT is gratifying to note the very decided improvement in the finances of the Baltimore & Ohio Railroad under its present management. The business of the road is rapidly increasing, and its earnings, both gross and net, show a very marked growth that indicates the possibility of a resumption of dividends in the not very distant future.

President Eckstein Norton Delighted.

President Eckstein Norton, of the Louisville & Nashville, who is now traveling in the South with Vice-president M. H. Smith, has just been interviewed at Nashville by a reporter for the American, and from what he is credited with saying, he is delighted with the condition of the road and with its successful report for last year just issued:

The earnings during the fourth week in October were \$569,570, or an increase of \$127,221 over the corresponding week of last year. The increase for the entire month over October, 1888, was \$323,251."

"Are the increased earnings due to an increase in any especial line of business?" was asked.

"No. They are due to a general increase in all classes of business. The annual report for the year ending June 30 last, showed that during the four years previous to July 1 last, the rolling stock of the road had been increased about 41 per cent., and by January 1 next increase in rolling stock will have reached over 60 per cent.; yet we are now short of cars.

We have received 20 new locomotives since July 1, 10 consolidation and 10 switch engines, and have contracted for 20 more consolidation engines to be delivered within the next few months. On July 1 we had contracted for 1,250 cars that had not been delivered, and have since contracted for 650 more, all to be delivered by January 1, making a total for the six months of 1,900 cars, 500 refrigerator cars, 500 box and 600 coal and ore cars.

A DISPATCH from Dallas, Texas, says: "It is understood that the Fort Worth & Rio Grande has made arrangements to build from Comanche to Goldthwaite, crossing the Colorado river about 6 miles west of that city, and from thence to San Saba and Llano. By that route their line would run for 20 miles over the undeveloped coal fields of San Saba, and bring the iron fields of Llano and the coal fields of San Saba within 20 miles of each other. This would give direct connection with Dallas over the Central and Atchison Railways."

THE Ohio Falls Car Co., of Albany, Ind., has received a contract to build a half-million dollars' worth of cars for the Central Railroad, of Georgia, consisting of 1,200 freight cars and 22 passenger coaches. This is one of the largest contracts ever received by this company. The contract was closed by Mr. L. G. Mathews several days ago. The Ohio Falls Co. now has enough work on hand to keep 2,000 men busy for four months. The company can with a full force turn out 22 freight cars a day and two passenger coaches a week.

BUILDING NEW FURNACE—NASHVILLE, TENN., Nov. 6, 1889.—This company on the 1st inst. broke ground for the erection of a 45-ton iron furnace. We hope to be in blast by the middle of May or first of June, 1890. Ores—brown hematite; fuel—charcoal. Outlay in furnace and opening ore mines, \$100,000, all provided. Company owns 6,000 acres of heavily timbered ore lands. Location 18 miles south of Columbia, Tenn., on the Nashville, Florence & Sheffield branch of the Louisville & Nashville Railroad.

ROCKDALE MINING & MANUFACTURING CO.

COKE OVENS—BIRMINGHAM, ALA., Nov. 4, 1889. The mines of the Horse Creek Coal & Coke Co. are located on the Kansas City, Memphis & Birmingham Railroad, 26 miles west of Birmingham, and are now ready for an output of 450 tons per day. Our coal is a superior steam, gas and grate coal, as fully tested by various railroads, manufacturers and domestic consumers here. Will shortly build fifty coke ovens.

WALTER MOORE, President.

TO PROSPECT FOR NATURAL GAS—HENDERSON, KY., Nov. 6, 1889.—A company has been formed here to develop natural gas, petroleum, oils, &c., in this vicinity. We expect to begin boring in a very few days.

O. W. RAS Sec'y and Treas.

Railroad Construction

Athens, Ga.—Dummy Line.—A dummy line will be built by the company reported elsewhere in this issue as organized to develop the Lilly property.

Augusta, Ga.—Railroad.—A. C. Hartshorne, of New Jersey, and S. T. Forstner, of New York, have been inspecting the Augusta, Gibson & Sanderaville Railroad with a view to purchasing. If purchased it will probably be made a standard-gauge road.

Baltimore, Md.—Cable Railroad.—It is reported that the Baltimore Traction Co. will at once lay a cable road, previously mentioned. The cost is to be \$3,000,000.

Baltimore, Md.—Electric Railway.—The mayor has consented to sign the ordinance permitting the North Avenue Railway Co., lately reported as contemplating the construction of a road, to use electricity or other improved rapid transit.

Bartholomew, Ark.—Railroad.—It is reported that a railroad is being constructed to pass through Popular Bluffs.

Bon Air, Tenn.—Railroad.—A railroad is contemplated to extend from Bon Air to Rockwood. It is reported that the charter has been applied for.

Bowling Green, Ky.—Railroad.—Meyer & Morris, railroad contractors, are making a survey and estimate of the cost of building the Bowling Green & Northern Railroad, previously reported.

Braidentown, Fla.—Railroad.—W. C. Patten, of Braidentown; Hamilton Gillespie, of Sarasota, and others have incorporated the Manatee & Sarasota Railway & Drainage Co.; capital stock \$50,000.

Buchanan, Va.—Railroad.—Major Jollife and a party of assistants are making a re-survey of the Virginia Western Railroad from Buchanan westward, previously mentioned.

Buckhannon, W. Va.—Railroad.—The West Virginia Central & Pittsburgh Railroad Co. (office, Piedmont) and the Midland Railroad Co., recently reported to jointly build from Buckhannon to Charleston, are securing the right of way for the proposed line.

Charleston, S. C.—Ex-Gov. Chamberlain has received authority to put the South Carolina Railroad in thorough repair, and to issue receivers' certificates in payment for all expenses incurred.

Charlestow, W. Va.—Railroad.—The building of a railroad up Elk river is being agitated.

Chattanooga, Tenn.—Railroad.—At a meeting of the Chattanooga Southern Railroad Co., J. W. James, treasurer of the Chattanooga Union Railroad Co., mentioned last week, was elected president. It is rumored that the latter road has secured the control of the former, and that this will insure the further building of it as rapidly as possible.

Chunchula, Ala.—Pole Road.—MacMahon & Buck, lately reported as building a pole road from Thirty-One Mile Bluff, on the Mobile river, towards Chunchula, have completed four miles, and may extend it six miles further. The outfit has been purchased.

Claremont, Va.—Railroad.—The report referred to last week that the Norfolk & Western Railroad Co. (office, Roanoke) would build a branch road to Claremont and establish a coaling station is not confirmed.

Clarksville, Tenn.—Railroad.—Citizens will subscribe \$90,000 towards securing the building of the road from Clarksville to Dickson, previously mentioned, by the Louisville & Nashville Co. (office, Louisville).

Comanche, Texas.—Railroad.—The Fort Worth & Rio Grande Railroad Co. (office, Fort Worth) will extend its lines to Comanche from Dublin. Bids for grading are being received.

Davis City, W. Va.—Railroad.—The Hulings Lumber Co. is building a railroad from Hendricks.

Eureka Springs, Ark.—Electrical Railroad.—Charles E. Davis is completing arrangements for the building of an electrical railroad, as reported several weeks ago.

Fort Smith, Ark.—Railroad.—The Secretary of State at Jefferson City, Mo., has issued a charter to the Kansas City, Nevada & Fort Smith Railroad Co., capital stock \$3,000,000. E. S. Martin has been elected president. The road will be built at once to Nevada, Mo., and thence to Fort Smith.

Fort Smith, Ark.—Railroad.—A charter has been granted to the Pittsburgh, Columbus & Fort Smith Railroad Co. The capital stock is \$1,000,000, and the road is to extend from Pittsburgh, Kan., to Fort Smith, 120 miles.

Fort Worth, Texas—Railroad.—The Fort Worth & Albuquerque Railroad Co. has been reorganized with Charles C. Black as president. Contract for constructing 100 miles of road northwesterly from Fort Worth has been awarded to Mallory, Cushing & Co., of Omaha, Neb.

Frederick, Md.—Railroad.—The question of the projected railroad from Frederick to Georgetown, D. C., lately mentioned, is being agitated,

and it is likely a definite conclusion will be reached by the close of the year.

Gadsden, Ala.—Railroad.—The Chattanooga, Gadsden & Birmingham Air Line Railroad Co., recently reported as having completed its surveys, has pending negotiations by which it is believed a syndicate will assume control of and construct the road at once.

Greenville, Miss.—Street Railway.—The Greenville Street Railway Co. contemplates extending its road.

Hagerstown, Md.—Railroad.—The Cumberland Valley Railroad Co. (office, Chambersburg, Pa.) is endeavoring to extend its lines to the Broad Top coal district of Pennsylvania.

Humboldt, Tenn.—Street Railroad.—The Humboldt Street Railroad Co., recently reported as having been incorporated, has closed a contract for the stock necessary to operate the road, and will soon make arrangements for the rails and cars.

Knoxville, Tenn.—Street Railroad.—The Middlebrook Street Railway Co., reported last week as chartered to build a street railroad by Samuel McKinney and others, will probably make it an electrical railroad. Nothing will be done at present.

Lexington, Ky.—Railroad.—The Louisville Southern Railroad Co. (office, Louisville) will, it is stated, extend its road from Lexington to Richmond.

Lexington, Ky.—Railroad.—The Louisville Southern Railroad Co. (office, Louisville) are locating for the extension of its road to Middletown, previously reported.

Little Rock, Ark.—Railroad.—A mortgage has been filed for \$45,000,000 on the St. Louis, Iron Mountain & Southern Railroad (office, St. Louis, Mo.)

Little Rock, Ark.—Railroad.—A road is being built from McAllister, Indian Territory, to Little Rock.

Luray, Va.—Railroad.—Supt. Flickwir and Assistant Engineer Low, of the Shenandoah Valley Railroad (office, Roanoke, Va.) have been looking over the country near Luray with a view to selecting the best location for the Washington branch of the Shenandoah Valley Railroad. It is stated that engineers are now making the preliminary survey.

Lynchburg, Va.—Electric Railway.—The time of privilege allowed the Lynchburg Street Railway Co. in introducing electricity as a motive power has been extended six months from December 10, 1889.

Macon, Ga.—The Marietta & North Georgia Railroad, lately reported as having obtained permission from the legislature to extend its road from Marietta to Atlanta, will commence work shortly. The road will be completed by next August.

Marion, Ky.—Railroad.—The voters of the Marion district, Crittenden county, have subscribed \$15,000 in the Ohio Valley Railroad stock to the Princeton, Marion & Ohio River Railroad, contemplated from Princeton to the Ohio river by the way of Marion.

Maryville, Tenn.—Railroad.—J. Robert Ervin, engineer of the Knoxville Southern Railroad is in Linville, N. C., making a preliminary survey of the line of road mentioned last week.

Maxton, N. C.—Railroad.—The railroad syndicate have completed arrangements for the construction of the Maxton & Pee Dee Railroad, previously mentioned.

Memphis, Tenn.—Railroad.—The Louisville, New Orleans & Texas Railroad Co. is locating a branch line. It will probably leave the main line at Clarkdale, Miss. Termination not yet decided upon.

Memphis, Tenn.—Railroad.—The Kansas City, Fort Scott & Memphis Railroad Co. (office, Kansas City, Mo.) is preparing to expend \$250,000 in improving their line preparatory to the completion of the great Mississippi bridge.

Memphis, Tenn.—Railroad.—The Raleigh Springs Railroad Co. will build the railroad to Raleigh lately reported. It will be nine miles long, and will be operated by steam and electric power.

Morgantown, W. Va.—Railroad.—J. F. Temple, of Waynesburg, Pa., is conferring with the officials of the Pennsylvania Railroad Co. relative to the extension of the Waynesburg & Washington Railroad (office, Pittsburgh) from Waynesburg through the Mt. Morris oil fields to Morgantown, W. Va.

Murfreesboro, Tenn.—Street Railway.—The Murfreesboro Street Railway Co., mentioned last week, will proceed with their work as soon as material arrives.

New Castle, Va.—Railroad.—The projected Craig Railroad, mentioned several weeks ago, is being finally located.

New Orleans, La.—Electric Railroad.—The Crescent City Railroad will meet on Nov. 18 to consider the proposition of the Electric Traction & Manufacturing Co. to equip their road with storage battery cars.

New Orleans—Belt Railroad.—The construction

of a belt railroad is being agitated. A. Brittin can give particulars if anything is done.

Owensboro, Ky.—Railroad.—Morgantown, Woodbury and Sugar Grove precincts of Butler county will vote on a proposition to subscribe \$24,000 to the stock of the Henderson State Line Railroad on the 21st of November.

Palatka, Fla.—Railroad.—Rapid progress is being made in the construction of the Palatka & Anclote Railroad. A length of 10 miles from Palatka is ready for track-laying, and will be in operation at an early date.

Richmond, Ky.—Street Railroad.—The Richmond Street Railroad Co. will build the street railroad previously reported and is getting estimates as to cost. John Bennett is president.

Richmond, Va.—Railroad.—The Richmond & Chesapeake Railroad Co. has reorganized with C. W. Mackey as president. Assurance is given that the tunnel mentioned several weeks ago will be built soon. A large part of the stock has been purchased by a Northern syndicate, and an extension of time has been asked of the city council.

Salisbury, N. C.—Railroad.—Surveys are being made for a railroad from Salisbury to Monroe.

Salisbury, N. C.—Railroad.—The Yadkin Railroad Co. is making surveys for its road to be built from Salisbury to Norwood, 40 miles, previously mentioned, and construction will commence early in December. T. F. Klutz is president, and A. Mauny, Milledgeville, N. C., treasurer. Contract for the 40 miles has been awarded.

Sanford, N. C.—Railroad.—The stockholders of the Atlantic & North Carolina Railroad (office, Newberne, N. C.) will hold a meeting on November 20 to consider the extension of the road by the way of Sanford to Charlotte.

Sylacauga, Ala.—Railroad.—A railroad will be built to the marble quarries mentioned elsewhere in this issue as to be developed by Michael Muldoon, of Louisville, and others.

Tallahassee, Fla.—Street Railroad.—The Tallahassee Railroad Co., lately mentioned, has been incorporated by Charles H. Bennett, Richard L. Bennett and George W. Saxon. Capital stock is \$50,000.

Uvalde, Texas—Street Railroad.—The Uvalde Street Railroad Co., lately reported as incorporated, will probably begin work in a few weeks.

Washington, D. C.—Railroad.—It is reported that engineers are at work on the extension of the Washington & Potomac Railroad from Mechanicsville to Point Lookout, Md., a distance of 45 miles.

Waycross, Ga.—Street Railway.—John S. Sharp will build a street railway, and is negotiating to operate same by electric power. This is probably the same as the road to be built by the Waycross Street Railway Co., previously reported as chartered.

Whitesville, Ky.—Railroad.—A branch road will be built to the coal mines lately mentioned as to be opened by the Dean-Field Coal Co., of Owensboro.

Williamsport, Md.—Railroad.—The surveys for the proposed branch of the Western Maryland Railroad (office, Baltimore) from Williamsport to a connection with the Baltimore & Ohio Railroad at Cherry Run, W. Va., have been completed. It is reported that construction will soon commence.

Wilmington, N. C.—Railroad.—The Cape Fear & Cincinnati Railroad Co. will, it is stated, shortly let contract for grading 63 miles of its proposed road.

Yazoo City, Miss.—Railroad.—Engineer Ricio, of the Georgia Pacific Railroad Co. (office, Birmingham, Ala.), is preparing to make a survey of the proposed branch road from Itta Benna to Yazoo City, mentioned two weeks ago.

Yazoo City, Miss.—Railroad.—The citizens of Yazoo City are agitating the building of another railroad.

AT the State fair in Birmingham, Ala., the Fort Payne Coal & Iron Co. was awarded the first premium for the largest and best display of mineral products, and the first premium for the largest and best display of clays, kaolin, sand and other material for the manufacture of glass, brick, terra-cotta and fire-brick, the premium being a diploma and \$40 in cash.

LUBRICATING OIL WORKS AT FORT PAYNE—BOSTON, MASS., NOV. 6, 1889.—It is proposed to start an oil works at Fort Payne, Ala., to make high-grade lubricating oil under the Davis patents. Chattanooga, it is reported, sends to the New York market yearly from 8,000 to 10,000 barrels of grease suitable for pressing into oils. Much of this grease is returned to the South in the form of oil. We propose to buy raw material on the ground and supply the South with lubricating oil.

THE DAVIS ANIMAL OIL CO.

Iron and Steel Markets.

The position of the market for iron and steel in general is practically the same as outlined in the Bulletin at the close of last week. The output of the steel mills is sold ahead to such an extent that manufacturers are chary about quoting prices on stock for near future delivery, and the position of crude materials is such that even greater hesitancy is manifested in naming prices for distant futures. As for the crude materials, it can only be said that present conditions point to a further advance rather than to an early permanent reaction. Manufacturers quote upwards of \$33 at Eastern mill for steel rails, some naming \$34@35 as the lowest they would venture to offer at pending some indication of a downward turn in the market price of Bessemer pig iron and spiegeleisen. No sales have been reported at over \$32.50, however, and comparatively few at above \$31.50. Steel billets have been sold in quite large-sized lots at \$33 at Eastern Pennsylvania mills, and at proportionate prices in Pittsburgh. In the latter market \$48 has been paid for steel wire rods, while small lots of foreign rods were reported sold at as high as \$53 laid down in New York. Finished iron in the form of bars, sheets, etc., is very strong also, the output of the mills being sold considerably ahead. Track materials, such as spikes, fish-plates, bolts and nuts, are also in strong position, as is the market for iron and steel nails, and in general foundry work decided activity is the rule. The consumption of foundry and mill pig, as well as the crude materials employed in steel-making, as a matter of fact, continues to absorb the current output in a great measure, and furnace agents have in several instances withdrawn all quotations.

Bessemer pig iron is very difficult to obtain at less than \$20 at Eastern Pennsylvania furnace at the present time, although quite large quantities were sold last week at \$19.50 and under. In Pittsburgh and vicinity the cost is \$20@21. About 2,000 tons foreign 20 per cent. spiegeleisen were sold last week at \$33@33.50, f. o. b. cars at Jersey City, future delivery, but the lowest price named at the present time is \$33.50, and most sellers are asking \$34@34.50. Of 10 per cent. spiegeleisen sales have been made at \$28. Ferro-manganese 80 per cent. is held at \$90 for future shipment.

Foundry pig iron is in active demand for delivery next year at prices on the basis of \$18 for No. 1 X foundry, but furnace agents refuse to book orders or name any prices that would likely be considered reasonable. For what little supply there is to be had for early delivery high prices are exacted. To all accounts the present inside figures are \$18@18.50 for No. 1 X, \$17@17.50 for No. 2 X and \$16@16.50 for grey forge, according to brand and size of lot.—N. Y. Commercial Bulletin.

REFERRING to the general activity of all industrial enterprises at that town the Anniston Press says:

The cotton factory is crowded with orders and running under whip and spur to keep up with them.

The pipe works have all they can possibly do and their orders on hand engaged will keep them running steadily through the winter and next summer and fall and winter again.

The new furnaces find a ready market for their pig, and both Woodstock furnaces are running steadily to keep abreast of the demand for the iron they make.

The Rolling Stock Works are stepping along merrily in response to orders, and gradually extending their space in anticipation of good things to come.

ELECTRIC PLANT AND ICE FACTORY—HARRODSBURG, KY., NOVEMBER 9, 1889.—We are now putting in electric-light plant and will put in ice plant in time for spring.

HARRODSBURG ELECTRIC LIGHT & POWER CO.

High Grade Ores.

The MANUFACTURERS' RECORD has, on several occasions, referred to the investigations that have been made by Col. O. C. King, of Morristown, Tenn., as to the extent and character of the mineral resources tributary to that town. Almost immediately adjacent to the town are very extensive iron properties which have been pronounced by experts to carry an abundance of unusually high grade ores. Col. King has just had a number of analyses of these ores made by the chemists of the Miller Manual Labor School, of Charlottesville, Va., and his report indicates that Morristown has ores of remarkable quality. The MANUFACTURERS' RECORD has received a copy of this report and we give it in full:

MILLER MANUAL LABOR SCHOOL,
CHEMICAL LABORATORY,
November 4, 1889.

The ores sent to this laboratory for analysis from Morriston, Tenn., have been examined with a view to determine their commercial value. I herewith submit you a report of the results:

I.—IRON ORES.

No. 1.	No. 2.	No. 3.	No. 4.	No. 5.
Metallic iron...\$6.56	\$6.65	66.86	50.21	55.31
Phosphoric acid...03	.08	.03	.242	.03
Sulphur.....trace	trace	....	....	....
Phosphorus.....	....	....	....	1.05

(Equivalent to phosphoric acid.)

II.—MANGANESE ORES.

The quantity of oxygen which an ore of manganese is capable of yielding generally regulates its commercial value. I have therefore determined only the "manganese dioxide" contained in each specimen—

No. 6.	No. 7.	No. 8.
Manganese dioxide.....53.92	65.87	44.35

III.

No. 9. (Zinc Blende), common ore of zinc, is largely mixed with "calcite," (calcium carbonate). The metallic portion yields 62.56 per cent. zinc.

IV.

No. 10. (Galena), common ore of lead, very pure. Contains 85 per cent. (metallic) lead.

V.

No. 11 is pure metallic antimony, essentially 100 per cent. antimony.

These figures represent the per cent. of the constituents to which they are placed opposite.

Very respectfully submitted,

ROBT. C. PRICE, Analyst.

It will be noticed that the iron ores run from 50.21 per cent. of metallic iron to 66.86, with no sulphur in three samples and all exceedingly low in phosphorus, while the manganese, zinc, galena and antimony ores are all likewise of high grade. Col. King appears to have secured mineral properties that should be opened up on a large scale in view of their importance to the development of the South.

NEW ENTERPRISES AT LOUISBURG—LOUISBURG, N. C., NOVEMBER 8, 1889.—There is talk of a cotton factory being built on the Jones water-power. Correspondence in regard to the machinery and building should be directed to Board of Trade. There is some talk of F. N. Egerton building a cotton-seed oil mill on the L. & F. Road near the depot. Egerton & Foard have just completed a steam cotton gin, &c. The Louisburg Contracting Co. has about completed three tobacco prize houses, and expect to build some factories in a short time, for which machinery will be wanted. Egerton & Foard expect to start a brick plant soon, for which they will want machinery. The county commissioners will give out shortly a contract to have iron cages put in the jail. Louisburg offers big inducements to all who want to commence any kind of small or large industry. Lots are desirable and cheap, and a cordial invitation is offered to all who will come and settle.

F. N. E.

Southern Financial News.**NEW BANKS.**

Americus, Ga.—It is reported that another bank will be started; capital \$500,000.

Baltimore, Md.—The Washington Street M. P. Church will be converted into a savings bank.

Birmingham, Ala.—The Banker's Association of Alabama has been organized.

Blackville, S. C.—The Merchants & Planters' Bank of Blackville, lately reported as chartered, has elected L. T. Izlar president. Capital is \$25,000.

Brunswick, Ga.—The Merchants & Traders' Bank, lately mentioned, has been organized with \$100,000 capital. J. M. Madden has been elected president and J. H. Scarlett cashier.

Cedartown, Ga.—The Commercial Bank of Cedartown, recently reported as having organized, has elected R. A. Adams president and R. O. Pitts cashier. Capital stock is \$50,000.

Dade City, Fla.—The Bank of Pasco county, under the same management as the Bank of Tavares, opened for business November 1.

Dayton, Tenn.—The Rhea County Bank, recently reported as having been organized, has begun business.

Florence, Ala.—Boston capitalists will start a bank and trust company with a capital of \$300,000. This is possibly the same as the Florence Loan & Trust Co., recently noted as having organized.

Frostburg, Md.—The First National Bank of Frostburg has been incorporated with \$50,000 capital. L. M. Gorsuch is president and O. M. Haverly cashier.

Gadsden, Ala.—The Queen City Bank, lately reported as organized, has elected J. C. Street president and O. R. Goldman cashier. Capital is \$100,000.

Galveston, Texas.—The Texas Banking & Insurance Co., recently reported as intending to change to a national bank, has formed the Galveston National Bank; capital \$500,000. R. S. Willis is president and T. J. Grace cashier.

Greenwood, Miss.—The Bank of Greenwood has increased its capital from \$25,000 to \$50,000.

Lake Charles, La.—A. V. Thomas and V. A. Turney will start a bank; capital \$50,000, to be increased to \$100,000 by January 1.

Laredo, Texas.—The Rio Grande National Bank, recently mentioned as being organized, has opened for business with J. H. Hamilton as president and E. C. Reed cashier. Capital is \$100,000.

Louisville, Ky.—The Union National Bank of Louisville has been formally opened with Geo. P. Swearerger as president and E. H. Conn, cashier.

New Orleans, La.—The Guaranty Co. of New Orleans, Limited, has been incorporated by Charles F. Buck, Charles Carroll, Henry P. Dart and others.

Rockingham, N. C.—It is stated that a new bank is a certainty, and a site for the building is secured.

Smith's Grove, Ky.—Several capitalists intend to open a bank soon.

Starke, Fla.—J. M. Seidle will open a bank.

Terrill, Texas.—John C. Russell is endeavoring to unite with St. Louis capitalists in forming a bank with \$1,000,000 capital.

Tunnel Hill, Ga.—The name of the bank lately mentioned as being organized with \$50,000 capital is the Whitfield Bank.

Tuskegee, Ala.—W. P. Thompson & Son contemplate starting a bank.

Waycross, Ga.—Capt. C. C. Grace has been elected president and J. E. Wadley cashier of the South Georgia Bank of Waycross, mentioned some time ago. The bank will commence business as soon as its vaults and safes are ready.

West Point, Miss.—The West Point Bank has been incorporated with \$25,000 capital by J. H. L. Gerdine and others.

Wheeling, W. Va.—It is stated that a bank and safe deposit company will be organized.

Winston, N. C.—C. W. Gilfillan, of Franklin, Pa., will possibly start a bank. Capital will probably not be less than \$150,000.

Morganton, N. C.—The county commissioners of Burke county will issue \$10,000 of bonds on January 1, 1890. Proposals of purchase of bonds should be marked proposals for the purchase of bonds and addressed to G. P. Erwin, chairman, Morganton.

Baltimore, Md.—The Old Town Fire Insurance Co. has declared a dividend of 2½ per cent. clear of all taxes, payable on December 2.

Greenwood, Miss.—The Bank of Greenwood has closed the first year of its existence by declaring a dividend of 12½ per cent.

New Orleans, La.—The Crescent City Railroad Co. has declared a dividend of \$1.00 per share, probably on and after November 10.

Wheeling, W. Va.—The Dollar Savings Bank has declared a dividend of 5 per cent. out of the business done in the last six months.

Increasing Industrial Activity.

The past week, like several that have preceded it, has been one of much activity in the organization of very extensive enterprises. Florence, Ala., has led with very heavy investments by Philadelphia and New England capitalists, including a \$500,000 cotton mill, which will be the largest in the State; a furnace to cost \$150,000; a \$300,000 loan and banking company and over \$1,000,000 in cash, it is reported, has been invested in the stock and land of the Florence Cotton & Iron Co. and the Florence Railroad & Improvement Co. In Florida a contract has been made for constructing a 300-mile canal to furnish a water way nearly the entire length of the State. At Bessemer, Ala., two new furnaces to cost probably \$400,000 are to be built. At Brierfield, in the same State, iron works that have been idle for several years are to be reorganized with \$500,000 of bonds and \$700,000 of preferred stock, and operations resumed. A steel plate mill is to be built in West Virginia; a \$200,000 clothing factory in Baltimore and extensive fertilizer works at Norfolk, Va. Railroad construction is being pushed very vigorously in many parts of the South, and some important lines have been let to contract during the week. In all directions there is great activity in industrial and railroad enterprises, and the South was never before so busy as it is to-day.

Manganese Ore.

GIBSLAND, LA., Nov. 8, 1889.

Editor Manufacturers' Record:

In your issue of November 2 I saw an article—"The Outlook for Manganese"—copied, with comments from you, which reminds me that there is near this place a large deposit of ore pronounced by several geologists to be manganese of very fine quality, and the ore is very rich; hence I thought it would be well enough for me to call the attention of foundry-men to the fact.

There is no lack of transportation facilities, our town being located at the crossing of the V. S. & P. division of the Queen & Crescent Route and the Louisiana, North & South Railway, about 41 miles east of Shreveport, in a very convenient position for transportation East, West, North and South.

There are other fine deposits of very rich iron ore; in fact, we are in the midst of an extensive field of iron ore, for the development of which no effort has ever been made. And this territory is covered by a dense growth of timber of the very best for charcoal, with indications of the presence of stone coal. We are also convenient to lime.

THOS. J. MANGHAM.

P. J. GOODHART & CO.

(Members of the New York Stock Exchange.)

24 BROAD STREET, NEW YORK.

Orders executed in New York and Boston for buying and selling stock of the

Anniston City Land Co.

We are prepared to carry same on **MARGIN.**

We make a specialty of all

Southern Securities.**FREDERIC TAYLOR & CO.
Bankers and Brokers,
84 BROADWAY.**

NEW YORK CITY.

Members of the New York Stock Exchange.

ALEX. BROWN & SONS

ESTABLISHED 1811.

BALTIMORE, MD.

—AND—

BROWN BROTHERS & CO.

New York, Philadelphia and Boston.

Foreign and Domestic Bankers,

AND MEMBERS OF THE

Baltimore, New York and Philadelphia Stock Exchanges.

(Private wire between Baltimore, Boston, Philadelphia and New York.)

**Interest allowed on deposits of
Banks, Bankers, Corporations and Indi-
viduals, Railroad, Municipal and Other
Loans Negotiated, and advances
made on Grain, Cotton, Stocks and Bonds, and
other approved collaterals.**

BUY AND SELL BILLS OF EXCHANGE

on Great Britain and Ireland, France, Germany, Holland, British West Indies and other foreign points.

**Issue Commercial and Travelers'
Letters of Credit.**

IN STERLING, available in any part of the world; **IN FRANCS**, for use in Martinique and Guadalupe; and **IN DOLLARS**, for use in this country, Canada, Mexico, the West Indies and South America.

**Make Cable and Telegraphic Transfers
of Money.**

Drafts Collected in all parts of the World.

BROWN, SHIPLEY & CO., LONDON.

Financial Agents of the United States Government in England.

**Baltimore Stock Exchange
Quotations.**

Reported by ALEXANDER BROWN & SONS, Bankers, Baltimore.

BALTIMORE, NOV. 13, 1889.

	BID.	ASKED.
Virginia 3's, new.....	67 1/4	68 1/2
Virginia Consul Coupons, N. F.....	10 1/2	11
Virginia 10-30 Coupons.....	23	27
N. Carolina 4's.....	96 1/2	
Norfolk Water 8's C.....	126	
Atlanta & Charlotte.....	89 1/2	
Ga. Can. & N. S.	102 1/2	103
Wil. & Wel. Gold, 7's.....	125 1/2	
Wil. & Wel. 5's.....	112 1/2	
Wil. Col. & Aug. 6's.....	118 1/2	
Atlanta & Chat. 1st, 7's.....	120	
Atlanta & Chat. income 6's.....	104 1/2	
Col. & Green. 1st, 6's.....	105 1/2	
Col. & Green. ad. 6's.....	81	84
Va. Midland, 1st, 6's.....	120	
Va. Midland, ad. 6's.....	116 1/2	
Va. Midland, 5, 6.....	116	
Va. Midland 4th, 3-4 1/2.....	91 1/2	
Va. Midland, 5th, 5 1/2.....	100	
Char., Col. & Aug. 7's.....	110	
Ga. Pacific ad.....	81	81 1/2
West Nor. Car. Cons'd 6's.....	90	101
Cape Fear and Y. Valley 6's, A.....	106 1/2	107 1/2
Cape Fear and Y. Valley 6's, B.....	104	104 1/2

Foreign Exchange Quotations.

ALEXANDER BROWN & SONS.

BALTIMORE, NOV. 13, 1889.

	Commercial.
Sterling.— Selling.....	481 1/2
60 days.....	481 1/2
3 days.....	483 1/2
Francs.— Selling.....	521 1/2
60 days.....	518 1/2
3 days.....	518 1/2
Reichmarks.— Selling.....	94 1/2
60 days.....	94 1/2
3 days.....	95 1/2
Gilders.— Selling.....	40 1/2
60 days.....	39 1/2
3 days.....	39 1/2

Commercial.

60 days.....

3 days.....

60 days.....

CONSTRUCTION DEPARTMENT.

WE PUBLISH, every week, a list of every new factory, of whatever kind, projected anywhere in the South; every railroad undertaken, and every mining company organized. This information is always fresh, and, by enabling manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased, is of great value. Manufacturers will find it to their interest to read this department carefully each week.

*Means machinery is wanted, particulars of which will be found in "Machinery Wanted" columns.

In correspondence relating to matters reported in this paper, it will be a favor if it is stated that the information was gained from the MANUFACTURERS' RECORD.

ALABAMA.

Anniston—Gas Works.—The Anniston Gas & Light Co. is laying $1\frac{1}{2}$ miles of 4-inch main, and will put in a new bench of five retorts and change a bench of threes to fives.

Anniston—Cotton Factory.—Sidebottom & Walton, of Philadelphia, Pa., are investigating with a view to locating a cotton goods factory in Anniston.

Ashville—Grist Mill and Gin.—Gilbert & Hodges contemplate adding to their saw mill, some time next year, a grist mill and cotton gin.

Bessemer—Iron Furnaces and Coke Ovens.—The De Bardeleben Coal & Iron Co. has selected a site for its two additional 125-ton coke iron furnaces mentioned in last issue.

Birmingham—Machine Shop.—The Birmingham, Bessemer & Powderly Dummy Line Co. has let contract to Peter Taylor for building its machine shop and roundhouse at Trevellick, near Birmingham, previously reported. Shop is to be 70x90 feet.

Birmingham—Coupling Stick Factory.—F. W. Beall, previously reported as organizing a stock company to manufacture his patent car-coupling stick, has organized the Beall Manufacturing Co. with H. F. De Bardeleben as president; J. H. Garner, vice-president, and J. B. Cobbs, secretary and treasurer. The capital stock is \$100,000.

Birmingham—Scale Factory.—The Herndon Automatic Scale Co. is being organized for the manufacture of scales. The capital stock will be \$50,000.

Blount Springs.—The Blount Springs Co. will meet December 7 to consider the issuance of \$50,000 of bonds.

Brierfield—Iron Furnace, Rolling Mill, &c.—Thomas F. Kurtz and Thomas E. Peters, trustees for the bondholders of the Brierfield Coal & Iron Co., previously reported as purchasing the company's property, have reorganized the company. \$500,000 of bonds and \$700,000 of preferred stock will be issued, and the works of the company, consisting of a coke iron furnace, rolling mill and nail factory, will be put in operation.

Decatur—Iron Furnace.—E. C. Gordon, lately reported as leasing the charcoal iron furnace owned by the Decatur Land, Improvement & Furnace Co. and to repair and put it in operation, is organizing a stock company to operate same.

Fayette County—Coal Mines.—It is reported that an English syndicate has recently purchased coal lands in Fayette, Walker and Tuscaloosa counties, and will develop.

Florence—Furniture and Implement Factory.—Rockford (Ill.) parties are prospecting with a view to locating a furniture and agricultural implement factory in Florence. Charles Tatum, secretary of the Florence Investment Co., can give information.

Florence—Cotton Mills.—One of the new industries previously reported as to be established, and about which no particulars were given, is a cotton mill to be built by the Florence Cotton Mills Co., organized by Boston capitalists with a capital stock of \$500,000. A site has been secured and a building 600x100 feet will be erected. J. Coons, of the Huntsville Mills, has been appointed superintendent and authorized to purchase machinery. Major J. H. Field or Mr.

Coons can give information. It is stated that another cotton mill will be built as soon as this one is put in operation.

Greenville—Electric-light Plant.—The erection of an electric-light plant is being agitated.

Helena—Rolling Mill.—A stock company has purchased the rolling mill of the Central Iron Works, and will improve and put it in operation, as lately mentioned. Ten new double-heating furnaces will be erected.

Helena—Coal and Iron Mines.—The De Bardeleben Coal & Iron Co., of Bessemer, lately reported as purchasing the properties of the Eureka Co., of Oxmoor, will continue the development of the Eureka coal and iron mines near Helena, probably on a larger scale.

Horse Creek—Coke Ovens.—The Horse Creek Coal & Coke Co., lately mentioned as opening new coal mine, will shortly build 50 coke ovens.

Leeds—Stone Quarry.—Charles F. Collum and J. N. Freeman, of Birmingham, will probably develop a stone quarry.

Leeds—Bridges.—Two new iron bridges will be built across the Little Cahaba river. P. W. East & Co. have the contracts.

Mobile.—The Florida Lumber Co. will meet November 25 to consider the issuing of bonds.

Oxford—Water Works.—R. P. Thomason, mayor, states that contract for the water works previously mentioned will be let soon.

Selma—Cotton Mill.—The Mathews Cotton Mills Co. will meet December 3 to consider the issuance of bonds not to exceed in amount \$75,000.

Sylacauga—Marble Quarries.—E. W. Linn, Enoch Ensley and Michael Muldoon, of Louisville, Ky., and others will develop marble quarries near Sylacauga. Steam drills will be used. Mr. Muldoon can give particulars.

ARKANSAS.

Bentonville—Creamery.—It is stated that a creamery to cost \$6,000 will be erected.

Camden—Car Shops.—Efforts are being made to have the St. Louis, Arkansas & Texas Railroad Co. (office, St. Louis, Mo.) erect extensive car shops in Camden.

Camden—Compress.—The Camden Compress Co. is repairing its cotton compress.

Cauthron—Coal Mine.—The Poteau Mining Co. is the name of the company lately reported as opening a coal mine near Cauthron.

Central—Grist Mill and Gin.—C. W. Minmire will rebuild his grist mill and cotton gin lately mentioned as burned.

Huntington—Cotton Mill.—A stock company will probably be organized to build a cotton mill. The Kansas & Texas Coal Co. can give information.

Huntington—Artesian Wells, &c.—The Kansas & Texas Coal Co. is sinking an artesian well and has erected a coal chute and made other improvements at its slope No. 21.

Joneboro—Flour Mill.—G. W. Culberson & Co. will erect a flour mill.

Little Rock—Turnpike.—E. N. Weigel has received contract to build a turnpike at \$4,000 per mile.

Little Rock—Water Works.—The American Water Works & Guarantee Co. is changing the location of its stand-pipe.

Little Rock—Electric-light Plant.—The Little Rock Electric Light Co. has enlarged its plant.

Little Rock—Granite Quarries.—Zeb Ward, previously reported as purchasing 160 acres of granite lands near Little Rock, will develop at once, and has secured machinery.

Newport—Timber Land.—E. M. Stump, of Kansas City, Mo., has purchased 1,400 acres of oak timber land for staves from J. S. Williams.

Rogers—Lake.—It is reported that great improvements will be made at the Electric Springs, including the construction of an artificial lake to cover about 50 acres.

Van Buren—Machine Shops.—The Missouri Pacific Railway Co. (office, St. Louis, Mo.) will, it is reported, build extensive machine shops and a roundhouse.

Yellville—Marble Quarries.—L. Matlock will develop marble quarries on James creek.

FLORIDA.

Eau Gallie—Marine Railway.—The Indian River Steamboat Co. will build marine ways to cost \$4,000.

Fernandina—Saw Mill.—Charles Easton, of Southsea, England, is investigating the timber lands of S. A. Swann with a view to purchasing for an English syndicate. It is stated that if a sale is made several saw mills will be erected.

Fernandina—Saw Mill.—It is reported that a large saw mill for sawing hard woods will be erected by Northern parties. W. B. C. Duryea can give information.

Fernandina—Stave Mill.—A stave mill is reported as to be erected by St. Louis (Mo.) parties.

Key West—Cigar Factory.—Del Pino Bros., whose cigar factory was reported in last issue as burned, have secured two large factories and will soon resume operations. The loss was \$120,000.

Key West—Slaughter-house.—A slaughter-house is to be erected. The mayor can give particulars.

Lake City—Laundry.—F. L. Kern contemplates starting the steam laundry mentioned in last issue.

Lake City.—The Lake City Improvement Association has been incorporated with C. C. Banfill, president; J. E. Young, vice-president, and A. B. Hart, secretary. The capital stock is \$100,000.

Leesburg—Canal.—The Ocklawaha Canal & Drainage Co. has been incorporated by T. C. Lanier, J. R. Cunningham, O. P. Rooks and others to construct a canal from Silver Spring run, in Marion county, to Lake Panasoffkee, in Sumter county. The capital stock is to be \$100,000.

Middleburg—Saw Mill.—A. H. Moss will probably rebuild his saw mill mentioned in last issue as burned.*

Middleburg—Brick Works.—A new brick machine has been put in the Green Cove Brick Works and a 75 horse-power boiler and engine will be added to operate it.

Ocala—Artesian Well.—Edward F. Joyce, of St. Augustine, has contracted with the Jeter & Boardman Gas & Water Association, of Macon, Ga., to sink a 12-inch artesian well for the Ocala water works.

Starke—Canning Factory.—A stock company is being organized to erect a cannery factory.

St. Augustine—Canal.—The Florida East Coast Canal & Transportation Co., lately mentioned as making arrangements for pushing the work on its canal, has let contract to Ritten, Moore & Co., of Mobile, Ala., to complete the cutting of the canal to Lake Worth within $\frac{1}{2}$ years. It is to be built from St. Augustine to Biscayne bay, 300 miles.

Tallahassee.—The Newport Springs & Land Improvement Co. has been incorporated by Charles F. Wicker, of Chicago, Ill.; Nathan H. Briggs, of Battle Creek, Mich., and Edward Lewis, of Tallahassee, to deal in real estate. The authorized capital stock is \$100,000.

GEORGIA.

Albany—Fertilizer Factory.—The Albany Fertilizer Co., lately reported as to enlarge its factory at cost of \$30,000, will add an acid chamber and storage room 40x80 feet, and put in phosphate mills, elevators, &c.*

Athens.—A land company is to be organized to develop the Lilly property, containing 1,000 acres.

Athens—Publishing.—Stone & Christy, proprietors of the Chronicle, and T. L. Gantt, proprietor of the Banner, are organizing a stock company to consolidate the two papers.

Atlanta—Sprinkling Apparatus.—The Fulton Bag & Cotton Mills will put in sprinkling apparatus, and have let contract to the Georgia Steam & Gas Pipe Co., of Columbus.

Brunswick—Saw Mill.—L. J. Hand will probably purchase 8,439 acres of timber land owned by Knabe & Scott, of Birmingham, Ala. If the purchase is made he will move his saw mill from Jemison, Ala., to near Brunswick.

Brunswick—Fertilizer Factory.—J. W. Wainwright, of Chicago, Ill., contemplates establishing a large fertilizer factory.

Brunswick—Manufacturing and Improvement Company.—The South Brunswick Terminal Compression & Manufacturing Co. has been incorporated by John I. Holly and E. P. Kennard, of New York city; H. L. Wayne, J. W. Bennet and C. Symmes for the building and operating of cotton compresses, wharves, etc., and with the privilege of engaging in manufacturing of various kinds. The capital stock is to be \$1,000,000.

Canton—Barrel Factory.—The barrel factory lately reported as to be enlarged will be operated by Calvin & Carrigan.

Cedartown—Cheese Factory.—B. B. Herrick, of Wellington, Ohio, will probably establish a cheese factory if given sufficient inducements.

Cordele—Machine Shops.—C. W. Hicks and Henry Holmes have formed a partnership to erect machine shops.

Dahlonega—Gold Mines.—A Boston syndicate is reported as negotiating to purchase the Hand gold mining property. It is stated that the price is \$1,500,000.

Macon—Chopper Factory.—The stock company mentioned last week as being organized by J. B. Ammons to manufacture his patent cotton chopper will have a capital stock of \$100,000.

Macon—Distillery.—A. & N. M. Block and A. Ullman will erect a whiskey distillery to cost \$10,000 at Vineville. The capacity will be 3 barrels per day at first, and will be increased later.

Macon—Oil Mill, Ice Factory, &c.—The Planters' Oil, Guano & Ice Co., previously reported as organized to erect a cotton-seed oil mill, fertilizer factory and ice factory, has increased its capital stock. As soon as the oil mill and fertilizer factory are completed, work on the ice factory will begin.

Rome—Iron Furnace and Car and Car-wheel Works.—C. A. Lyerly, Edward Watkins, L. S. Colyar and others, of Chattanooga, Tenn., are the parties lately mentioned as making a proposition to build a charcoal iron furnace. They also propose to erect car and car-wheel works. Their proposition to build a furnace has been accepted.

Savannah—Land.—The Southern Land Co. has been incorporated by B. H. Levy, J. L. Whatley, E. J. Kennedy and others to deal in real estate. The capital stock is \$5,000.

Tunnel Hill—Iron Furnace.—The Chattanooga Mining & Manufacturing Co. has increased its capital stock to \$50,000 to build the iron furnace lately mentioned. Davis & Duran have contract for the foundations.

Tunnel Hill—Saw Mill.—The Chattanooga Mining & Manufacturing Co. has erected a saw mill of 10 feet daily capacity.

Washington—Oil Mill.—The Excelsior Manufacturing Co. has been chartered to build the cotton-seed oil mill lately mentioned.

Waynesboro—Carriage Factory.—Mobley & Lasseter have started a carriage factory.*

West Point—Oil Mill.—The Planters' Oil & Manufacturing Co. will put in a new 40 horsepower engine.

KENTUCKY.

Ashland—Electric-light Plant.—The Ashland Electric Light Co. contemplates putting in an incandescent light dynamo.

Barbourville—Bridge.—A \$15,000 bridge will be built across the Cumberland river. The mayor can give particulars.

Covington—Machine Works.—The Frisbie Engine & Machine Co., lately mentioned as incorporated, will operate machine shops at Cincinnati, Ohio.

Ferguson—Saw and Grist Mill.—John I. Ferguson has rebuilt his saw and grist mill recently burned.

Fordsville—Mining.—Louisville and Owensboro capitalists have been investigating mineral lands, it is stated, with a view to developing.

Georgetown—Twine Factory.—The Blue Grass Cordage Co., previously reported as organized to manufacture hemp twine, has let contract for the erection of factory building to Lucas & Brooks.

Grand Rivers—Factories.—It is reported that over \$50,000 will be invested in factories by the Grand Rivers Co., reported in last issue as organized.

Harrodsburg—Electric-light Plant.—The Harrodsburg Electric Light & Power Co., lately mentioned, has let contract for its plant to the Fort Wayne Jenney Electric Light Co., of Fort Wayne, Ind.

Hawesville—Gas Well.—A gas well is being sunk.

Henderson—Factory.—W. G. Head is erecting a factory on Third street.

Henderson—Natural Gas.—The Henderson County Natural Gas, Mining & Manufacturing Co., lately reported as incorporated, expect to sink wells at once.

Lexington—Publishing.—J. O. Hodges and H. T. Groom have commenced the publication of the Real Estate Register and Trades Journal.

Louisville—Asphalt Mines.—The Grayson County Asphalt Mining & Contract Co. has been incorporated by O. C. Richardson, J. M. Hardin, J. S. Cain and others to develop asphalt lands. The capital stock is to be \$500,000.

Louisville—Wheel Factory.—Jacob Muller, of Millersburg, Pa., is prospecting with a view to moving his wheel factory to Louisville.

Magnolia—Flouring Mill.—Walter Hurst is thinking of building a flour mill if he can interest some one in the project.

Newport—Sand Mining.—The Kentucky Sand, Loam & Earth Co. has been incorporated by J. F. Dye, W. H. Harton and John Eyer to develop sand banks. The capital stock authorized is \$30,000.

Whitesville—Distillery.—George Capp is erecting a 10-bbl. distillery near Whitesville.

LOUISIANA.

Baton Rouge—Levee Work.—The State Board of Engineers will receive proposals for constructing levees at Longwood and Pecan Grove.

Lake Charles—Water Works.—The Calcasieu Artesian Well & Oil Co. has obtained permission to lay water mains through the town.

MANUFACTURERS' RECORD.

29

New Iberia—Electric-light Plant.—It is stated that the electric-light plant lately mentioned will be added to the saw mill of Gall & Pharr.

New Orleans—Coffin Factory.—The Orleans Manufacturing Co., previously reported as to enlarge its coffin factory has increased its capital stock from \$40,000 to \$60,000.

New Orleans—Phonograph.—Robinson & Underwood will probably organize a company to operate the Edison phonographs in Louisiana and Mississippi.

New Orleans—Candy Factory.—P. W. Dielman & Co. will put an engine and boiler in their candy factory.

New Orleans—Vinegar Factory.—H. Garde will erect a vinegar factory.

Pattersonville—Planing Mill.—N. B. Trellue & Co., Peter Norman and Pharr & Williams have purchased the Thornton planing mill and organized as the Pattersonville Sash, Door & Blind Factory, Limited. Mr. Norman is president.

Shreveport—Fertilizer Factory.—It is reported that company has been organized to manufacture fertilizers.

Shreveport—Cotton Mill.—A. Prendergast, of Findlay, Ohio, has made a proposition to build a cotton mill.*

MARYLAND.

Baltimore—Clothing Factory.—Strouse & Bros. will erect a clothing factory, six stories, 70x200 feet, to cost about \$150,000, including site. It is to be lit by electricity from a dynamo to be put in, and will have three elevators. Charles L. Carson prepared plans. Charles Markland has the contract.

Baltimore—Factory.—The Acme Manufacturing Co. has been incorporated by R. J. C. Jones, E. W. Read, C. W. S. Banks and others.

Baltimore—Land.—It is reported that New York capitalists are endeavoring to purchase 50 acres of land in North Baltimore belonging to Walter B. Brooks and Hugh L. Bond, with the intention of expending about \$2,000,000 in laying off in residence lots and improvements.

Cumberland—Cement Mill.—The Cumberland Cement Co. is building two new dry-kilns, increasing its capacity 100 barrels.

Knoxville—Canning Factory.—The erection of a canning factory is being discussed.

Sparrow's Point—Pumping Station.—The Pennsylvania Steel Co., which is building furnaces, steel works, etc., is erecting a pumping station. The company is negotiating to purchase 500 acres of land adjoining its present property, which consists of about 1,200 acres.

Washington, D. C.—Projectile Factory.—The Roberts Projectile & Manufacturing Co. has been incorporated in Virginia with R. R. Roberts, president; M. V. Barley, vice-president, and K. S. Murchison, secretary, to manufacture the Roberts projectile. The authorized capital stock is \$1,000,000.

Washington, D. C.—Gun Foundry.—Congress will probably make an appropriation at its next session to enlarge the gun foundry at the Washington navy-yard. The Secretary of Navy can give particulars when definitely decided.

MISSISSIPPI.

Friar's Point—Oil Mill.—The stock company to build the oil mill lately mentioned will not be organized at present.

Ripley—Wagon and Furniture Factory.—It is reported that a large wagon and furniture factory will be built.

Vicksburg—T. M. Smedes, E. C. Carroll, G. S. Irving and others have purchased the Warren Oil Mills and incorporated the Hill City Oil Mills. The plant will be repaired and put in operation. Capital stock is \$50,000.

West Point—Gin Factory.—B. A. Smith, of Rutherford, Tenn., is the party lately mentioned as contemplating moving a cotton gin factory to West Point.

Yazoo City—Saw mill.—W. R. Coleman contemplates erecting a saw mill.*

NORTH CAROLINA.

Burgaw—Land.—The Pender & Onslow Land & Improvement Co. is negotiating with the State board of education to purchase land in Pender county.

Concord—Iron Works.—C. W. Swink, A. B. Young, S. J. Beatty and others have organized a \$12,000 stock company to manufacture from wood and iron.

Fayetteville—Silk Factory.—An effort is being made to establish a silk factory.

Goldsboro—Fire-alarm System.—The city wants to put in a fire-alarm system, either bells or an electrical apparatus. Address Nathan O. Berry.

Greensboro—Paper Box Factory.—A paper box factory is projected.

Greensboro—Cotton Mill.—It is reported that O. S. Causey, of High Point, will start a cotton mill.

Hickory—Wood-working Factory.—The Hickory Manufacturing Co. is building a brick addition to its wood-working factory.

Hickory—Wood Factory.—The Catawba Wood Works has been organized by Ohio parties for the manufacture of ship and insulator pins.

Hickory—Saw and Planing Mill.—Kennler & Lake, of New York city, will erect a saw and planing mill.

High Point—Furniture Factory.—The furniture factory mentioned in last issue as being erected by O. C. Wysong will be operated by Johnson & Co.*

High Point—Cotton Mill.—New machinery for the manufacture of fancy cotton cassimeres is being put in the Empire Plaid Mills.

Kinston—Handle and Spoke Factory.—Clay Parrott is reported as contemplating the erection of a handle and spoke factory.

Kinston—Soap Factory.—A soap factory is projected.

Louisburg—Cotton Gin.—Egerton & Ford have erected a cotton gin.

Louisburg—Brick-yard.—Egerton & Ford contemplate starting a brick-yard.*

Louisburg—Cotton Factory.—The erection of a cotton factory on the Jones water-power is talked of. The Board of Trade can give particulars if anything is done.

Louisburg—Prize Factories.—The Louisburg Contracting Co. is building three tobacco prize factories and expect to build others.

Louisburg—Oil Mill.—F. N. Egerton is considering the erection of a cotton-seed oil mill.

Morganton—Electric-light Plant.—The town is considering putting in an electric-light plant and is getting estimates as to cost, etc. N. B. Dilworth can give information.*

Murphy—Machine Shops.—It is rumored that the Richmond & Danville Railroad Co. (office, Richmond, Va.) has purchased the Valentine property as a site for machine shops.

Raleigh—Cotton Mill.—The Raleigh Cotton Mills, lately reported as letting contract for its building, has commissioned Julius Lewis and J. S. Wynne to go North and purchase the machinery.

Raleigh—Plumbago Mines.—George S. Emrick, of Philadelphia, Pa., has purchased plumbago mines near Raleigh from Joseph Blake and will develop them.

Salem Chapel—Flour Mill.—Stafford Bros. will build a flour mill at once.*

Wilmington—Water Works.—It is probable that the Clarendon Water Works Co. will either change the location of its stand-pipe or build an additional one.

SOUTH CAROLINA.

Anderson—Shoe Factory and Tannery.—The name of the \$50,000 stock company mentioned in last issue as to be incorporated by C. C. Langston, T. S. Crayton, W. F. Cox and others to erect a shoe factory and tannery is the Anderson Tannery & Shoe Factory Co.

Berkeley—Canning Factory.—The Berkeley Canning Co. has been organized.

Dillon—Cotton and Fertilizer Factories.—It is reported that the Dillon Cotton Seed Oil Co. contemplates adding fertilizer machinery and erecting a cotton factory.

Florence—Electric-light Plant.—W. R. Barringer, mentioned in last issue as organizing a company to erect an electric-light plant, has failed to secure a franchise and will not erect the plant for the present.

Greenville—Bridge.—C. C. Jones will receive payment until November 20 for building an iron bridge over the Reedy river at Main street.

Pendleton—Creamery.—J. C. Stirling has erected a creamery on his Hampshire farm, near Pendleton.

TENNESSEE.

Coliar—Stave Factory.—Gardner Bros. contemplate erecting a stave factory.

Buckeye—Coal Mines and Coke Ovens.—The Pioneer Coal & Coke Co. is developing coal lands. It has nearly completed 50 coke ovens.

Chattanooga—Pumping Station.—The pumping station lately mentioned as to be erected at the foot of Lookout mountain by the Chattanooga Water Co. will cost \$50,000.

Chattanooga—Bridge.—The Chattanooga Land, Coal, Iron & Railway Co. will probably soon commence the construction of a railroad bridge across the Tennessee river, over which the Chattanooga & Western Railroad will enter the city.

Columbia—The Columbia Real Estate & Investment Co. has been incorporated with E. W. Gamble, president; J. T. Crails, vice-president, and W. J. Hine, secretary, to deal in real estate.

Columbia—Iron Furnace and Mines.—The name of the company mentioned in last issue as commencing work on a charcoal iron furnace, 18 miles south of Columbia, is the Rockdale Mining & Manufacturing Co., of Nashville. The company owns 6,000 acres of heavily timbered ore lands. The furnace and the opening of iron mines will cost \$100,000. Capacity will be 45 tons daily.

Harriman—New Town, Water Works, &c.—The East Tennessee Land Co., of 96 Broadway, New York, N. Y., lately reported as organized to build a town to be called Harriman, will lay off lots, grade streets and build sewers. It is said to have organized three mining companies and companies to erect an electric-light plant, water works and gas works; also a lumber company with a capital stock of \$150,000, and a brick manufacturing company.

Huntingdon—Saw Mill.—G. T. Bullock will probably rebuild his saw mill reported in this issue as burned.

Iron City—Iron Mines.—The Shoal Creek Iron Co. will, it is reported, develop the Vanleer iron ore lands.

Jackson—Cotton Mill.—A stock company is being organized to build a cotton mill.

Loudon—Foundry and Machine Shop.—J. A. Ferguson and Thomas Robinson will erect a foundry and machine shop. Machinery is to be purchased at once.

Memphis—Wood-working Factory.—Gibson & Hunt, of Winchester, have made a proposition to move their wood-working factory to Memphis.

Morristown—Coffin Factory.—Samuel Sullenberger has started a coffin factory.

Neely—Grist Mill and Gin.—It is reported that a grist mill and cotton gin will be built.

Sherman Heights—Boulevard.—A government boulevard is reported as to be constructed from Sherman Heights to the Chickamauga battlefield at a cost of \$50,000.

Sherman Heights—Limestone Quarry.—Macarney & Igo have commenced developing a limestone quarry. They have contract to furnish the Citico Furnace Co., of Chattanooga.

TEXAS.

Beaumont—Iron Works.—Greeves & Bisland, of Orange, have purchased the Beaumont Iron Works and will put in new machinery.

Brenham—Oil Mill.—It is rumored that another cotton-seed oil mill will be built.

Brenham—Compress.—The company that owns the old cotton compress on the Texas Central Railroad near Brenham talks of selling it and purchasing a new hydraulic press.

Clarksville—Canning Factory.—H. B. Wright, M. L. Sims, J. H. Burks and others have organized a stock company to erect a canning factory. The capacity will be from 6,000 to 10,000 cans daily. The building will be 60x100 feet. About 150 hands will be employed. Mr. Wright is president.*

Coleman—Coal Mine.—The Silver Moon Coal & Mining Co. has struck a 3-foot vein of bituminous coal 9 miles north of Coleman, and will, it is stated, erect machinery and develop.

Cuero—Oil Mill.—The erection of a cotton-seed oil mill is talked of.

Dallas—Levees.—The name of the company reported in last issue as organized to reclaim 100,000 acres of land near Dallas in the Trinity Valley Improvement Co. It proposes to straighten the Trinity river and build levees at a cost of \$1,500,000.

Denison—Land.—Eastern capitalists have purchased land at East Denison to the amount of \$50,000, and will, it is stated, spend \$20,000 in improving it. Edward Perry can give information.

Denison—Machine Shops.—It is reported that the Houston & Texas Central Railroad Co. (office, Houston) will build machine shops.

Eastland—Coal Mines.—Mr. Wheeler will probably develop coal mines near Eastland.

Fort Worth—Woolen Mill.—The secretary of the Board of Trade has received a proposition to build a woolen mill. It is being considered.

Fort Worth—Collar, Bagging and Twine Factory.—The Moss Collar, Bagging and Cordage Co. has been incorporated with a capital stock of \$100,000 to manufacture moss collars and jute bagging twine. Machinery is being purchased; 110 hands will be employed.

Galveston—Electric Works.—W. F. Ladd will probably endeavor to organize a company to manufacture a patent electric battery for lighting purposes.

Greenville—Ice Factory.—A 10-ton ice factory is reported to be built. The Greenville Water & Electric Light Co. can probably give information.

Hearne—Gin.—L. W. Carr, executor of the B. W. Beckham estate, will rebuild the cotton gin mentioned in last issue as burned next spring.*

Hillsboro—Flour Mill.—A \$20,000 stock company has been organized to build the roller flour mill previously reported.

Houston—Stove Factory.—James A. Cushman, lately mentioned as enlarging his machine works, is also adding the manufacture of stoves.

Paris—Publishing.—The Times Publishing Co. has been incorporated with a capital stock of \$5,000.

VIRGINIA.

Balcony Falls—Cement Works.—It is possible that the cement works lately mentioned as to be established at Glasgow will be removed from Balcony Falls to that place by Locker & Co.

Buena Vista—Steel Plant.—It is reported that negotiations are now pending for the establishment of a large steel plant. The Buena Vista Co. can give information.

Clinton Forge—Tannery.—The Iron Gate Tanning Co. has been incorporated by James Crawford, S. C. McNally and others, of Alleghany City, Pa.; Frederick Colburn, Jacob Yost and others to erect a tannery at Iron Gate. The capital stock is \$50,000.

Lynchburg—The Blue Ridge Dyspepsia Water Co. has been incorporated with P. F. Brown, president; J. T. Williams, vice-president, and J. W. Faulkner, secretary, to put on the market a medicinal water. The capital stock is \$5,000.

Norfolk—Wharves.—The English syndicate lately mentioned as to erect chemical and fertilizer works is preparing to build wharves and docks. Commodore A. E. Bateman is interested.

Richmond—Motor Works.—The Wright Motor Co. has been incorporated with J. S. Parrish, president; Aaron Hortor, vice-president, and B. F. Wright, general manager, to manufacture motors. The capital stock is to be not less than \$50,000 nor more than \$1,000,000. It contemplates building works for manufacturing motors soon.*

Richmond—Land.—T. A. Lamb has purchased a large tract of land adjoining Barton Heights, a suburb of Richmond, and will lay off in lots.

Roanoke—The Roanoke Gas & Water Co. has let contract to the Glamorgan Co., of Lynchburg, to furnish the pipe for the extension of its mains, lately mentioned. About 4½ miles of pipe will be required.

Roanoke—Phonograph.—The Old Dominion Phonograph Co. has been chartered with J. H. Gilora, of Richmond, as president; L. L. Powell, secretary, and J. B. Levy, treasurer.

Roanoke—Land.—The North Roanoke Land Co. has been organized with S. W. Jamison, president, and H. M. Darnall, secretary and treasurer. It has purchased 72 acres of land, and will lay off in residence sites. The capital stock is to be not less than \$60,000.

Salem—George Allen, F. C. Burdette, J. H. Palmer and others are organizing a land, loan and trust company.

WEST VIRGINIA.

Benwood—Machine Shops.—It is rumored that the Baltimore & Ohio Railroad Co. (office, Baltimore, Md.) will build repair shops.

Benwood—Sheet Mill.—The Riverside Iron Co., of Wheeling, will build its sheet mill referred to in last issue (under Wheeling) at Benwood. Work will probably not begin before spring.

Benwood—Tube Works.—It is rumored that the Benwood Iron Works will enlarge its tube works.

Buckhannon—Saw Mill.—The Alexander Boom & Lumber Co. has located a portable saw mill on the left fork of the Buckhannon river, 23 miles from Buckhannon.

Mannington—Oil Well.—A. J. Montgomery, of Washington, Pa., previously reported as sinking an oil well, will put down three new wells.

New Cumberland—Electric-light Plant.—The New Cumberland Light, Heat & Power Co., lately mentioned as organized, is erecting an incandescent plant of 750 lights capacity and will add an arc plant as soon as contract can be made with city. Machinery is purchased.

Parkersburg—Fire-brick Works.—The erection of fire-brick works is talked of.

Parkersburg—Brewery.—The Parkersburg Brewing Co. has let contract for ice machinery for its brewery, previously reported, to Fitch & Co., of Cincinnati, Ohio, at \$15,000, and for cooperative machinery to Deckenbach & Co., of Cincinnati, Ohio, at \$7,000.

Parkersburg—Flour Mill.—C. A. Wade, previously reported as to build a flour mill, is remodeling his mill to the roller system. Edward Corbett, of Washington, D. C., has contract.

Piedmont—Electric-light Plant.—The Piedmont Electric Light Co. is reported as to enlarge its plant.

Shinnston—Pipe Line.—Several gas wells are being sunk about three miles from Shinnston, and the building of a pipe line to Shinnston is talked of.

Wellsburg—Gas Well.—George Given is sinking a gas well.

Wellsburg—Brick-yard.—Nicholls & Matthews have put new machinery in their brick-yard.

Wheeling—Ice Factory.—The Schmidbach Brewing Co., lately reported as enlarging its brewery, has purchased two ice machines of 40 tons capacity each per day, to increase the capacity of its ice factory.

Wheeling—Machine Shop.—Baird Bros. contractors for the iron work for the Union Railroad bridge across the Ohio river, have erected a blacksmith and machine shop.

Wirt County—Saw Mill.—Robert Fraser, of Warrenton, Va., contemplates erecting a saw mill for cutting oak lumber and staves.*

Building Notes.

Anniston, Ala.—The building mentioned in last issue as to be erected by the Bank of Anniston will be 22x96 feet.

Asheville, N. C.—Dr. Charles Hunter and Dr. E. D. Leffingwell, of Danville, N. Y., are investigating with a view to building a sanitarium.

Augusta, Ga.—C. B. Allan has been awarded the contract to rebuild the Augusta Orphan Asylum, lately mentioned, at \$53,300. It is to be five stories, 165x56 feet. Lewis F. Goodrich prepared plans.

Augusta, Ga.—The Armour Packing Co. will, it is reported, build a large refrigerator warehouse.

Baltimore, Md.—Carl Henderson will erect 24 two-story houses on Biddle street near Cannon.

Baltimore, Md.—The legislature will be asked to authorize the building of an additional wing to the House of Correction.

Birmingham, Ala.—Hotel.—W. T. Smith will erect a four-story hotel at the corner of Twenty-third street and Second avenue. It will have a frontage of 100 feet on Second avenue.

Birmingham, Ala.—The Newport News & Mississippi Valley Railroad Co. (office, Richmond, Va.) has let contract for stone work on its new depot, previously reported, to Blatz & Krebs, brick work J. Meriwether and iron work to Snead & Co.

Birmingham, Ala.—T. C. Thompson & Co. will erect a two-story brick building at C avenue and Twentieth street to cost \$15,000.

Birmingham, Ala.—James H. Windrim, supervising architect, Washington, D. C., will receive bids until the 2d of December for all labor and material required for the new courthouse and postoffice building.

Blackstock, S. C.—A branch of the Southern Building & Loan Association (office, Columbus, Ga.) has been organized.

Charleston, W. Va.—The question of a new opera-house being erected is being agitated.

Chattanooga, Tenn.—The Mountain City Club has purchased a site 40x80 feet for its clubhouse, lately mentioned. Plans are invited until December 1 for a building to cost between \$20,000 and \$30,000. Address R. M. Barton, Jr., president.

Chattanooga, Tenn.—W. M. Wilhoit and Jacob Peyer will build a three-story business house to cost \$25,000 at South Chattanooga.

Columbia, S. C.—The St. Matthew's Building & Loan Association, capital stock \$100,000, has been incorporated.

Columbus, Texas.—Martin, Burns & Johnston, lately announced as the contractors of the new court house and jail, will commence work shortly.

Dallas, Texas.—It is rumored that the Fort Worth & Rio Grande Railroad Co. has made arrangements to build from Comanche to San Saba and Llano by way of Goldthwaite, giving direct connection with Dallas over the Central & Atchison Railway.

Dallas, Texas.—The New York Life Insurance Co. will possibly erect a building costing \$1,000,000. Hon. W. C. Connor, Dallas, can give information.

Dallas, Texas.—The West Texas Conference of the Colored Methodist Church will build a college to cost between \$20,000 and \$30,000 at whatever point in North Texas will offer the greatest inducements. C. F. Moore, 248 Boll street, will receive offers.

Empire, Ga.—The Empire Building, Loan & Trust Co. has been incorporated.

Florence, Ala.—The Primary Trustee Stockholders of the Alabama Alliance Exchange of Lauderdale county meet on the 1st inst. Arrangements are to be made for the erection of an Alliance warehouse at Florence.

Florence, Ala.—The Florence Education & Land Co. solicits bids for the erection of the new Baptist University at Florence. Plans and specifications will be ready November 25th, and contract let December 3d. Building will be 24 feet front, 121 feet deep, and central part four stories high. F. C. Rousseau, of Birmingham, is the architect.

Florence, Ala.—A branch of the Southern Home Building & Loan Association has been organized with Dr. James S. Lawton as president.

Florence, Ala.—The Florence Cotton Mills Co., mentioned in this issue as to build a cotton mill, will erect 50 cottages for its employees.

Florence, S. C.—F. H. Hudson, mentioned in last issue as about to commence work on his opera-house, states that work will not begin before next fall.

Fort Payne, Ala.—J. J. Nix is erecting a three-story brick block.

Fortress Monroe, Va.—The contract for building the officers' quarters, lately reported, was awarded to Hosier & Daugherty for \$8,274.

Fort Payne, Ala.—Hotel.—A \$125,000 hotel will be erected. The Fort Payne Coal & Iron Co. can probably give information.

Fort Worth, Texas.—Plans have been prepared for a truck-house, an engine-house and a central station. J. J. Kane, city engineer, can give information.

Fort Worth, Texas.—A high school will be erected, allegedly stated; cost \$71,000. The mayor can give information.

Greenville, Ala.—The Greenville Building & Loan Association will erect 25 cottages in the western part of the town.

Greenville, Ala.—The Baptists will erect a church soon. The Episcopalians will move their church and use it for a Sunday-school after their new house is built.

Hot Springs, Ark.—The Church of Christ will soon erect a new building.

Jackson, Miss.—Hotel.—J. M. Skiles & Co. will, it is stated, build a \$15,000 hotel next summer.

Key West, Fla.—Three market-houses will be erected auxiliary to the one already noted.

King's Mountain, N. C.—R. T. Cansler contemplates making further improvements in fitting up his spring as a summer resort.

Louisburg, N. C.—Plans have been prepared for a new town hall to be built of brick; cost \$6,000.

Louisville, Ky.—Hotel.—Louis Seelbach is negotiating to purchase a site for a \$300,000 hotel.

Louisville, Ky.—Armour & Co., of Chicago, Ill., are reported as to erect a large warehouse and cold-storage building.

Louisville, Ky.—The Louisville Safety Vault & Trust Co. has accepted the plans of Maury & Dodd for the fire-proof building previously reported. It is to be seven stories and cost \$250,000.

Louisville, Ky.—Hotel.—The South Park Hotel Co., reported last week as chartered with \$50,000 capital, will build a 100-room hotel with all modern appliances.*

Lynchburg, Va.—D. P. Morrison will erect a \$7,500 brick building at Main and Sixth streets.

Macon, Ga.—The Mulberry Street Methodist Church contemplate erecting a college.

Macon, Ga.—It is reported that the Southern Cadets will purchase the property corner of Mulberry and First streets, and erect an armory on the site.

Macon, Ga.—The Covington & Macon Railroad Co. will erect 20 section-houses and 6 freight-houses along their line. Proposals invited. Plans to be seen at office, Macon.

Marion, Ala.—A building and loan association has been organized with C. W. Lovelace as president; J. E. Frazier, vice-president, and A. F. Armstrong, secretary.

McComb City, Miss.—A branch of the Interstate Building & Loan Association has been organized with Heber Craft as president, and Dr. W. P. Gatlin, secretary and treasurer.

Memphis, Tenn.—The First Methodist Church will erect a new edifice.

Monroe, La.—J. P. Parker will build a residence to cost \$5,100, and R. R. Blanks, of Columbia, an \$8,000 residence.

Morganton, N. C.—A branch of the North Carolina Building & Loan Association has been organized by J. J. Hill, supervisor of agencies, with W. C. Ervin, president, and S. T. Pearson, secretary and treasurer.

Monroe, La.—The Merchants & Farmers' Bank will erect a two-story bank building to cost about \$12,000. H. C. Voss has contract.

Montezuma, Ga.—Macon county will probably build a new courthouse. If so, \$5,000 will be donated to secure its erection in Montezuma instead of Oglethorpe.

Murphy, N. C.—The question is being agitated as to the advisability of building a courthouse of marble for Cherokee county.

Nashville, Tenn.—The establishment of a Baptist University is being discussed. An organization will soon be formed and efforts will be made to raise the endowment fund, \$1,000,000.

Nashville, Tenn.—The East End M. E. Church has decided to erect a new edifice, work to commence in two or three weeks.

Nashville, Tenn.—The contract for constructing the gatehouse at the new reservoir of the city water works, mentioned last week, has been awarded to George Moore at \$6,362. W. M. Leftwich, Jr., prepared plans.

Natchez, Miss.—The Louisville, New Orleans & Texas Railroad Co. (office, Memphis) will erect a new passenger depot. The old one will be enlarged and used for freight purposes.

Newnan, Ga.—The Newnan Land Co. will erect at once several cottages on their property.

Newnan, Ga.—Hotel.—The building of a \$25,000 hotel is contemplated by an Alabama capitalist.

New Orleans, La.—The Illinois Central Railroad Co. (office, Chicago, Ill.) is considering the building of a union depot.

Quanah, Texas.—Hotel.—J. K. Rombo is building the hotel reported in last issue.

Richmond, Va.—The Citizens' Building Association No. 7 has received a charter to conduct a general building and loan business. Capital stock is to be not less than \$50,000 or more than \$200,000. A. B. Becker is president, and Charles A. Schmidt, secretary.

Ridgway, S. C.—A branch of the Interstate Building & Loan Association has been organized with W. H. Buff as president, and C. P. Wray, secretary and treasurer.

Roanoke, Va.—James S. Simmons and R. H. Woodward are building fine residences in the west end.

Salisbury, Texas.—The Salisbury Building & Loan Association has been chartered.

San Antonio, Texas.—Gov. Ross, at Austin, will receive plans and specifications until January 5, 1889, for the new Texas Insane Asylum, recently noted, to be located near San Antonio. Cost of building not to exceed \$150,000. \$500 will be paid for the plans selected.

Selma, Ala.—Hotel.—W. B. Gill will rebuild his hotel, lately reported as burned. The loss was \$50,000.

Southport, N. C.—Hotel.—It is reported that a Northern syndicate has purchased 650 acres of land on the sea-coast, on the line of the projected Cape Fear & Cincinnati Railroad, and will lay off a park and build a hotel to contain 350 rooms and to cost \$165,000.

Spartanburg, S. C.—The Converse College Co., recently mentioned as organized, has been incorporated; capital stock \$25,000.

St. Augustine, Fla.—The St. Augustine Improvement Co. has plans nearly completed for the erection of a stone church for the African M. E. Church.

San Marcos, Texas.—A \$15,000 school house will be erected. The mayor can give information.

St. Matthews, S. C.—The St. Matthews Building & Loan Association has been incorporated by M. O. Dantzler, J. H. Loryea, W. T. C. Bates and others. Capital stock is \$100,000.

Tallahassee, Fla.—Hotel.—Charles G. Wicker, lately mentioned as to probably build a hotel, has with others incorporated the Newport Springs & Land Improvement Co. with privilege of building hotels. The authorized capital stock is \$100,000.

Texarkana, Ark.—St. Louis, Iron Mountain & Southern Railroad Co. (office, St. Louis, Mo.) will, it is rumored, erect a brick freight depot to cost \$20,000.

Tuskegee, Ala.—W. P. Thompson, W. A. Cloud, E. T. Varner and others will build a cotton warehouse.

Tyler, Texas.—The new \$60,000 hotel lately reported as to be built is under construction. Messrs. Swan & Long can give information.

Versailles, Ky.—A stock company is being organized to build the opera-house previously reported. It is to cost \$16,000.

Washington, D. C.—The St. Cloud Building at the corner of Ninth and F streets, Northwest, will be torn down and a large ten-story structure will take its place. The property has been purchased by Philadelphia and Boston capitalists for \$200,000, and the new building when completed will be taken by Washington capitalists.

Washington, D. C.—Ground has been broken for a building to be erected by Charles Graff, mentioned three weeks ago, from the designs of Architect Shultz. Work is progressing on the new house of L. H. Schneider, lately reported; designers and builders are Ward & Robinson.

White Sulphur Springs, Ga.—The Georgia Southern & Florida Railroad Co. (office, Macon) contemplates the erection of a hotel.

Washington, D. C.—W. H. West will erect a three-story dwelling to cost \$5,000; L. D. Wilson, a brick dwelling to cost \$5,000; the Concordia Lutheran Church, a chapel to cost \$5,000; James L. Barbour, a warehouse three stories high to cost \$8,000; C. A. Max Whyle, a four-story \$30,000 dwelling; John E. Libbey, 3 two-story dwellings to cost \$9,000; R. A. Phillips, 7 two-story dwellings to cost \$11,000; Joseph Entopher, a two-story brick dwelling to cost \$5,000; Wm. Z. Partello, 4 three-story brick dwellings to cost \$8,000; German Orphan Asylum, a new edifice to cost \$25,000; plans have been made by T. F. Schneider for 40 dwellings to cost \$350,000, also for 52 dwellings; by N. T. Haller for a three-story dwelling to cost \$5,000, also for 4 two-story dwellings to cost \$20,000.

Wheeling, W. Va.—The Athenaeum has been purchased by parties who will, it is stated, build a fine music hall on its site.

Wheeling, W. Va.—The Baltimore & Ohio Railroad Co. (office, Baltimore, Md.) is reported as to erect a large freight building.

Wilmington, N. C.—The First Baptist Church will build a lecture hall to cost \$5,000.

CONTEMPLATE BUILDING MOTOR WORKS.
RICHMOND, VA., November 16, 1889.—The Wright Motor Co. has been duly incorporated in Southern States. The company designs erecting plant in this city as soon as the first one of its new motors has been built. Will need machinery of various kinds, such as lathes, drills, planers, etc. B. F. WRIGHT.

The South's Advantages for Cotton Manufacturing.

Major J. F. Hanson, a well-known cotton manufacturer, of Macon, Ga., in a recent paper on cotton manufacturing in the South, prepared to be read before a meeting of New England cotton mill owners, said:

In many instances cotton mills have been constructed in the South by men without practical knowledge of the cost or value of their products. On coarse and medium yarns and fabrics we have pushed production until it is in excess of the demand. In view of this fact the question of changing to finer grades of goods has been discussed to a large extent, and in many cases the machinery originally intended for coarser goods has been changed, as far as it was practicable to do, to finer production, while the extension of plants in other instances have been designed for this purpose.

New England has seen the manufacture of coarse goods, which she originally produced, transferred to the South. The unsatisfactory condition of this trade for a long period is directing attention to finer work, and with an advantage of 3/4 of a cent per pound on raw material, it is evident that the South is in position to contest this class of manufacturing with New England. If we had mills upon New England's cost, and her skilled labor and experience in management, there would be no uncertainty with reference to the results of this contest. The South has secured the coarse goods trade on cheaper cotton and labor. In the former her position is strong with reference to the production of finer fabrics, and time will determine the effect of her system of labor on this class of work.

A margin of \$3.50 per bale upon the cotton consumed by Northern mills operating 12,725,000 spindles, and consuming sixty-seven pounds to the spindle annually, or 852,575,000 pounds, would amount to about \$6,394,312.50, which would be saved to these mills if they were operated in the South. This item alone constitutes a saving sufficient to pay 6 per cent. annually upon \$102,000,000; or, at \$25 per spindle, would put in operation 4,000,000 spindles, adding 300 per cent. to the present capacity of all the mills in the South; or it would build one-fourth of all the cotton mills of the Northern States.

The cost of our plants and the absence of skilled labor for the higher grades of manufacture are the barriers now to unlimited development in this direction. When we shall approximate your conditions in these respects, the South will become the greatest cotton manufacturing section of this country. We have suffered from inexperience, but we are learning something. We have been poor, and are yet poor, but our capital is increasing.

ANOTHER NEW TOWN TO BE STARTED—TRENTON, GA., Nov. 4, 1889.—The New England Iron, Coal, Land & Manufacturing Co., of Georgia, was organized under its charter at Morrison, Dade county, Ga., on the 4d inst. by the election of a board of directors, and the board of directors elected Roswell Furnham, of Bradford, Vt., president; L. J. Brown, of Boston, Mass., secretary and treasurer, and F. B. Pratt, assistant secretary and treasurer. They intend to build a new town three miles north of Trenton, named New England City.

T. J. LUMPKIN.

[Special dispatch to MANUFACTURERS' RECORD.]
ELECTRIC-LIGHT PLANT WANTED—LAREDO, TEXAS, Nov. 11, 1889.—We are prepared to negotiate for electric-light plant of fifty arcs—twelve hundred candle-power—and one thousand incandescent twenty candle-power capacity.

THE LAREDO IMPROVEMENT CO.

ORE MINING—TALLADEGA, ALA., Nov. 9, 1889.—We have taken a contract to raise 100 tons of brown hematite per day for ten years, and are now opening the beds.

THE ASHLEY-LANIER IRON ORE CO.

MACHINERY WANTED.

If you desire to purchase machinery of any kind consult our advertising columns, and if you cannot find just what you wish, send us particulars as to the kind of machinery needed. We will make your wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. You will thus get all information desired as to prices, etc.

Artesian Well Outfit.—James D. Montgomery, mayor, Hempstead, Texas, wants prices on small artesian well outfit.

Bell.—Bessemer, Ala., will purchase a bell for the city tower. Address J. C. Houston, city clerk.

Boiler and Engine.—G. A. Clute, Clinton, N. C., wants bids on an 80 horse-power boiler and 40 horse-power engine.

Boiler and Engine.—Travis Jones, Waco, Texas, wants two 80 horse-power boilers and one 150 horse-power engine.

Brick Machinery.—Egerton & Ford, Louisburg, N. C., will want brick machinery.

Bridge.—C. C. Jones, Greenville, S. C., will receive proposals until November 20 for constructing an iron bridge.

Builders' Supplies.—M., care MANUFACTURERS' RECORD, Baltimore, Md., wants address of manufacturers of builders' materials.

Cane Mill.—L. A. Magruder, Yazoo City, Miss., wants to correspond with the manufacturer of the Douglas patent cane mill.

Canning Factory.—H. B. Wright, Clarksville, Texas, wants bids on outfit for a canning factory with a guaranteed daily capacity of from 6,000 to 10,000 cans.

Cells.—The Franklin County Commissioners, of Louisville, N. C., will soon let contract for furnishing new iron cells for the jail.

Cotton Machinery.—The Board of Trade, Louisville, N. C., wants to correspond in regard to machinery for cotton mills.

Cotton Mill.—A. Prendergast, Findlay, Ohio, wants prices on cotton mill machinery.

Electric-light Plant.—N. B. Dilworth, Morganaton, N. C., wants information as to cost of an electric plant for lighting that town.

Electric-light Plant.—The Laredo Improvement Co., Laredo, Texas, wants bids on an electric-light plant of sufficient capacity to furnish 50 arc lights of 1,200 candle-power and 1,000 incandescent lights of 20 candle-power.

Elevators.—Gravely & Miller, Danville, Va., will want an elevator or two for tobacco factory

Elevators.—P. H. Hanes & Co., Winston, N. C., will want elevators in spring for a large tobacco factory.

Engine and Boiler.—C. L. Nussman, Nussman P. O., N. C., wants a second-hand engine and boiler of from 5 to 10 horse-power.

Excelsior and Husk Machines.—P. F. Connally, Waycross, Ga., wants address of manufacturers of the upright excelsior machines and shuck or husk machine for grinding shucks in the mattress business.

Fertilizer Machinery.—The Albany Fertilizer Co., Albany, Ga., wants phosphate mills, engine, boilers, elevator, guano cars, &c.

Fire-alarm System.—Nathan O'Berry, Goldsboro, N. C., wants to correspond in regard to purchasing a fire-alarm system.

Flour Mill.—Stafford Bros., Salem Chapel, N. C., want one pair three-foot best French burrs, smut machines, rolls, gearing, belting, bolting cloths, &c., for a flour mill.

Furniture Factory.—Johnson & Co., High Point, N. C., want machinery for the manufacture of bedsteads.

Gin, &c.—C. W. Minmire, Central, Ark., will probably want two gin stands, a boiler and belting.

Gins.—L. W. Carr, Hearne, Texas, will want 4 huller gins with the Munger improvement for handling cotton.

Grist Mill.—C. W. Minmire, Central, Ark., will probably want a grist mill.

Hotel.—T. C. H. Vance, Louisville, Ky., will purchase all machinery and appliances for a 100-room hotel to be built by the South Park Hotel Co.

Implement Factory.—J. B. Ammons, Macon, Ga., will want outfit of machinery for a factory for manufacturing cotton choppers.

Iron Roofing.—Lowry & Witherspoon, Yorkville, S. C., want iron roofing for factory building.

Jackson Holland, superintendent postoffice and courthouse building, Baltimore, Md., will receive proposals until November 22 for furnishing and

putting in place folding doors, slat shutters, iron grating, and the painting of the iron work.

Locomotive.—J. H. Lawson, Talladega, Ala., wants a light locomotive for logging railroad. Flat wood track will be used.

Machine Works.—The Wright Motor Co., Richmond, Va., will soon want complete outfit of machinery, such as lathes, drills, planers, &c., for works for manufacturing motors.

Machinery.—P. F. Connally, Norcross, Ga., wants the address of parties manufacturing machines for grinding shucks in the mattress business, and the upright excelsior machine.

Oat Flour Machinery.—M. A. Smith, 680 West Fayette street, Baltimore, wants information and prices about oat flour and oat meal machinery.

Planer.—A. H. Moss, Middleburg, Fla., wants prices on a planer and matcher. Second-hand preferred.

Propellers.—R. R. Barron, Walnut and Levee streets, New Orleans, La., wants to correspond with the manufacturers of the Chillicothe propellers having cast iron hubs and wrought iron blades.

Punch and Shears, Forges, &c.—Prices for one combination punch and shears; shears to cut flat bar $1\frac{1}{2}$ in., and also $\frac{1}{2}$ in.; punch to punch 9-16 hole in $\frac{1}{4}$ in. bar; one power blower sufficient to blow three blacksmiths' forges; one 8x10 horizontal engine; one vertical boiler, 15 horse-power, and one belt pump for feeding boiler, are wanted by F. M. Arthur, 66 Fairlie street, Atlanta, Ga. This machinery can be either new or second-hand in first-class order. Punch and shears must be of the most approved pattern.

Quarrying Machinery.—L. Matlock, Yellville, Ark., will probably want a plant for developing marble quarries.

Rails, &c.—Travis Jones, Waco, Texas, wants 18,000 feet of 30-lb. flat rail for street railroad, 20,000 feet of 30-lb. T rail, bolts, straps, &c.

Saw Mill.—A. H. Moss, Middleburg, Fla., wants prices on a saw mill with 40-foot carriage. Good second-hand preferred.

Saw Mill.—Robert Frazer, Warrenton, Va., wants to purchase machinery for saw mill for cutting oak lumber and staves.

Saw Mill Outfit.—W. R. Coleman, Yazoo City, Miss., wants prices on saw mill outfit.

Stamp Mill.—The Lucky Eight Gold Mining Co., Gainesville, Ga., will want a 10-stamp gold mill of 850-lb. stamp.

Soapstone.—J. P. Fitzgerald, Farmville, Va., wants information about soapstone, its value, uses, etc.

Spoke Machine.—Lowry & Witherspoon, Yorkville, S. C., want spoke tenoning and facing machine.

Tobacco Factory.—P. H. Haynes & Co., Winston, N. C., will want machinery in spring for a large tobacco factory; also iron columns.

Town Clock.—F. E. Hunter, El Paso, Texas, will receive bids until December 2 for furnishing a town clock.

Wells.—G. E. Borce, El Paso, Texas, wants bids for sinking artesian wells—say 3,000 feet.

Wood-working Machinery.—Mobley & Lasseter, Waynesboro, Ga., will want in the future wood-working machinery, including band saw, cut-off saw, lathes, etc.

Wood-working Machinery.—Johnson & Co., High Point, N. C., want some machinery for bedstead factory. They have power.

BURNED.

Centerside, Ga.—The merchant mills of J. D. Cooley; loss \$5,000.

Frenchburg, Ky.—The saw mill of J. Klabus damaged by a boiler explosion.

Huntingdon, Tenn.—The saw mill of G. T. Bullock. Will probably be rebuilt.

Laurens, S. C.—The Badgett grist mill and cotton gin, 8 miles from Laurens, damaged by a boiler explosion.

Macon, Ark.—The saw mill of E. H. Hillman.

Montezuma, Ga.—The variety works of W. H. Underwood.

The cotton gins of J. M. Green, Quitman, Ga.; on the Skinner place, near Stoneville, Miss.; Allen Myers, near Holland, Texas; W. L. Maden, near Damascus, Miss.; C. H. Allyn, near Chatfield, Texas; Farmers' Alliance, Alexandria, Ala.; Mrs. J. L. Cotton, near Whitesville, Ga.; Elber Askew, in Jackson county, Ga.; W. S. McEmuray, near Madison, Ga., and J. M. & C. J. Foster, Shreveport, La., have been burned.

GOLD MINING—\$30,000 ORE REPORTED—ELLI-GAY, GA., NOV. 11, 1889.—We have purchased a prospecting stamp mill; will need a 10-stamp gold mill of 850-lb. stamp in a short time. We are now making gold ore that assays twenty thousand dollars to the ton. Have a large amount of lower grade ore—over 260 acres. Will be able in a few weeks to give estimate for a larger mill, &c.

THOS. H. B. HAASE,
Gen. Man. LUCKY EIGHT GOLD MINING CO.

HETHERINGTON & NASON,

Manufacturers and Dealers in Supplies for

Boiler Makers, Machinists, Railroads, Steam and Gas Fitters

Boiler Plate and Tank Iron, Lap-Welded Pipe and Boiler Tubes, Boiler and Sheet Iron Rivets, Steam Brads Goods and Engine Trimmings, Iron Valves and Fittings. Pipe Workers' and Machinists Tools, Wood and Iron Pulleys, Belting, Hose and Packing. SEWER PIPE, FIRE BRICK and CLAY.

405 and 407 Elm Street, Dallas, Texas.

Zell's Improved Boilers

Cheapest and best Steam Generators on the market.

RESULTS GUARANTEED.

CAMPBELL & ZELL CO.

IRON FOUNDERS,

Manufacturers and Engineers,
ALICE ANNA & EDEN STREETS,
BALTIMORE, MD.

Send for circulars.

WATER POWER UTILIZED.

at any distance from source by ELECTRICAL TRANSMISSION. The simplest, cleanest and cheapest to operate for Mining, Street Railways, Electric Lighting and Manufacturing.

C. S. VAN NUIS, Constructing Electrical Engineer,
18 CORTLANDT STREET, NEW YORK.

C. R. MAKEPEACE & CO.
ARCHITECTS and MILITARY ENGINEERS
PROVIDENCE, R. I. Plans, Specifications and Estimates furnished for Cotton and Woolen Mills.

LOCKWOOD, GREENE & CO.

MILL
ENGINEERS,
NEWBURYPORT, MASS.

PLANS AND SPECIFICATIONS FURNISHED FOR THE CONSTRUCTION EQUIPMENT AND ORGANIZATION OF COTTON AND WOOLEN MILLS.

WRITE FOR PRICES TO

THE SOUTHERN EQUIPMENT CO.

Representing reliable manufacturers of

Railway, Mining and Mill Supplies.

ORDERS FILLED PROMPTLY.

Chattanooga, Tenn.

Rumors That Dissolve When Touched.

[Special Dispatch to MANUFACTURERS' RECORD.]

NEW YORK, November 12, 1889.

Mr. John H. Inman denied to-day that there was any truth in the report recently telegraphed from here to a Birmingham paper that there was a financial battle on hand between himself and Duncan, the other "Southern financial mastodon." He had heard nothing about ten additional furnaces to be planted soon in Alabama and Tennessee. Capt. John C. Calhoun said he had not heard one word to confirm these rumors.

Neither of these gentlemen had heard anything to substantiate the report that the Standard Oil men were making fabulous offers for the stock of the Tennessee Coal & Iron Co. Mr. Inman and Capt. Calhoun were both unable to confirm the report that an English syndicate was trying to get control of a number of hotels, North and South; and they had heard nothing of efforts being made by a Boston syndicate to secure the stock of the Elyton Land Co.

Your correspondent learns on good authority that each one hundred shares of the Elyton Land Co.'s stock has paid up to the present time a total of \$200,000 in dividends.

CANNING FACTORY—CLARKSVILLE, TEX., Nov. 10, 1889.—We have organized a cannery factory with \$10,000 paid-up capital, backed by at least \$20,000 available capital. We will want to buy machinery for a guaranteed capacity of from 6,000 to 10,000, and would be much pleased to hear from machinery men on the question.

D.

H. B. WRIGHT.

The BOOMER & BOSCHERT
KNUCKLE JOINT

PRESS
FOR BALING
CLOTH, PAPER, YARN, &c.
Or for any other purpose requiring
green pressure
BOOMER & BOSCHERT PRESS CO.
329 W. Water St. Syracuse, N. Y.

CAR PILE DRIVERS
Extension irons, to drive from one beat to another, 20 feet later, driving 9 feet from center. Fitted up with the new-style Nasmyth Steam Pile Hammer.
VULCAN IRON WORKS, CHICAGO.

W. H. COLE,
Electrical ENGINEER

AND
Consulting Electrician,
80 Fifth Ave., New York.

Tests, Measurements and Estimates of all kinds. Sole agent of the Phoenix Incandescent Lamp Co. Lamps for any System and Candle Power.

The Fort Worth Loan & Construction Co.

CAPITAL, FULLY PAID, \$100,000.
We are prepared to furnish plans and construct large buildings, public or private, and when desired carrying part of the cost of construction as a deferred payment.

PRINCIPAL BUSINESS OFFICE, FORT WORTH, TEXAS.
EASTERN OFFICE, EQUITABLE BUILDING, BOSTON.

POPULAR AND DIRECT ROUTE.

THE BAY LINE

For Old Point Comfort, Norfolk and the South.

Steamers leave daily (except Sunday) Union Dock 6:30 P. M., Canion Wharf 7 P. M.; arrives Old Point Comfort 7 A. M., at Norfolk at 8 A. M., Port Royal 8:15 A. M. At OLD POINT COMFORT connect with CHESAPEAKE & OHIO RAILROAD for Richmond, Charlottesville, Greenbrier, White Sulphur Springs, Cincinnati and all points West. At NORFOLK with NORFOLK & WESTERN RAILROAD for Petersburg, Richmond, Lynchburg, Roanoke, Bristol, Knoxville, Chattanooga, Memphis and the Southwest; also with the NORFOLK SOUTHERN RAILROAD for Elizabeth City, Edenton and Eastern North Carolina. At PORTSMOUTH, VA., with SEABOARD & ROANOKE RAILROAD for Weldon, Raleigh, Southern Pines, Charlotte, Fayetteville, New Bern, Wilmington, Charleston, Columbia, Augusta, Savannah, Jacksonville and all PRINCIPAL SOUTHERN CITIES.

Palace Steamers, Unsurpassed Cuisine, Undisputed Night's Rest, Sure Connection.
For Tickets and Information apply at Company's Office, 129 E. Baltimore St.
or on board steamers.

E. BROWN, G. T. A. LENNON JOHN, Agent.

"Mohawk Dutchman" Band Saw Guide.

To insure even and easy running of a band saw machine it is necessary that the saw blade should move with all freedom possible. It has ever been a problem to construct guides that would offer little or no resistance to the motion of the blade. To prevent friction at the back of blade seems to have been the universal admission of experts as an impossibility, and experiments with the innumerable appliances invented to obviate this difficulty have resulted generally in failure.

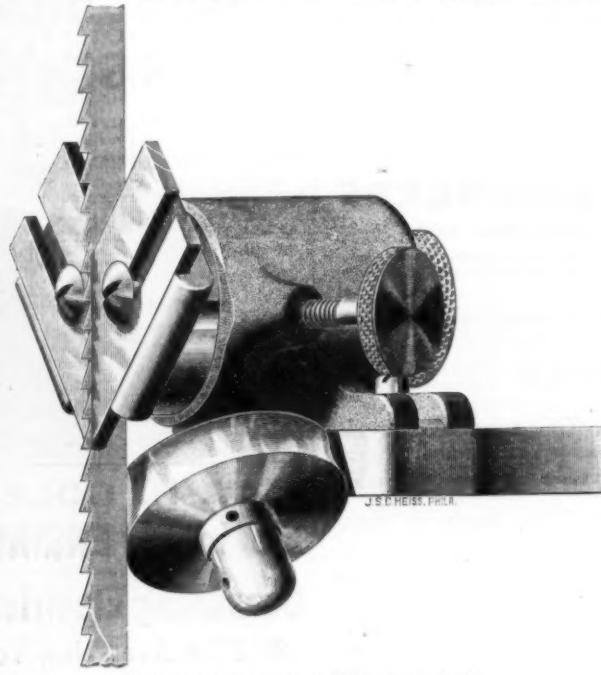
The importance of a perfect working guide is obvious, and one that will prevent the many difficulties experienced and so well known to operators should not fail to command universal endorsement.

The engraving herewith presented illustrates the invention of R. McChesney, well known as "The Mohawk Dutchman," and enjoying the reputation of being the most expert band sawyer in the world.

This device, it is claimed, prevents all the annoyances and practically overcomes the trying difficulties formerly experienced with other guides.

It is manufactured by Goodell & Waters, Philadelphia, and thus described in their circular:

The saw in its downward motion re-



"MOHAWK DUTCHMAN" BAND SAW GUIDE.

volves the wheel forming the back guide, such wheel having a slightly concave surface and set on an angle so that the plane in which the saw moves intersects the axis of the wheel near the middle of the wheel. As the wheel continually revolves while the saw is running, it is impossible for the saw to form any groove or rut in the rim of the wheel, thus giving the saw a free and unobstructed motion, creating no friction, keeping the saw firmly up to the work, doing it smoother and quicker, and preventing crystallizing, cramping or checking of the blade. The wheel runs on a ball bearing, requires no oiling, never heats and is always in proper adjustment. The temper of the saw is not disturbed in the least, which is in itself a very important feature, and the wheel has a tendency to straighten the blade at the back.

The adjustments are few and quickly made. A thumb screw at the back of the guide regulates the jaws for saws of different widths and the side guides are adjusted for different gauge saws by a simple movement of machine screws. Wood and metal side pieces are sent with each guide, and either may be used at option of operator. They may be applied to all styles and makes of machines, and to band resaws as well. For prices and further details we refer our readers to the manufacturers, Goodell & Waters, Philadelphia.

THERMODYNAMIC, HEAT MOTORS AND REFRIGERATING MACHINES. By De Volson Wood, C. E., M. A., professor of engineering in the Stevens Institute of Technology. Third edition, revised and enlarged. New York: John Wiley & Sons, 15 Astor Place.

The first edition of this valuable work appeared in September, 1888. The third edition contains a variety of new subjects and miscellaneous matter compiled from the best sources. The book aims at the development of the essential principles of thermodynamics or the application of heat as a motive power. It deals with the physics and mathematics of heat, air, gases and vapors, heat motors and refrigerating machines. It may be said to be a complete treatise, combining, as it does, all that is essential in the great works of Rankine, Clausius and Thomson. It does not seek to popularize the science of thermodynamics, but aims at leading the reader up to the summit by a more easy and graded path than can be found in the writings of the great specialists. The settled principles of the science are developed for the most part in the body of the work, while special subjects are treated in the addenda. The additions comprise discussions of the vapor engine, Sterling's engine, Ericsson's hot-air engine, the gas engine, naphtha engine, ammonia engine, steam injector, pulsometer, compressed air

WILL REBUILD BURNED MILL—MIDDLEBURG, FLA., Nov. 8, 1889.—My saw and planing mill was burned; loss \$3,000 to \$4,000; no insurance. I think I shall rebuild, and will want a saw mill and planer and matcher; would prefer good second-hand machinery; would want about a 40-foot carriage; prefer a log beam carriage. The Green Cove Brick Works has a new heavy brick machine, and is putting in a 75 horse-power boiler and Westinghouse engine to run it.

A. H. MOSS.

COTTON-SEED OIL MILL—WASHINGTON, GA., Nov. 6, 1889.—The Excelsior Manufacturing Co., chartered yesterday, propose building a cotton-seed oil mill in the near future.

R. O. BARKSDALE.

PROPOSALS.

SEALED PROPOSALS will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M., on the 5th day of December, 1889, for the erection and completion of two roofs at mailing platforms for the U. S. Custom House and Sub-Treasury building at Chicago, Ill., in accordance with the drawing and specification, copies of which may be had on application at this office or the office of Superintendent of Repairs at the building. Each bid must be accompanied by a certified check for \$100. JAS. H. WINDRIM, Supervising Architect. November 12th, 1889.

SEALED PROPOSALS will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M., on the 10th day of December, 1889, for all the labor and materials required to complete the iron work of the Tower and Dome of the U. S. Courthouse and Postoffice building at El Paso, Texas, in accordance with drawings and specification, copies of which may be had on application at this office or the office of the Superintendent. Each bid must be accompanied by a certified check for \$100. JAS. H. WINDRIM, Supervising Architect. November 8th, 1889.

SEALED PROPOSALS will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M., on the 5th day of December, 1889, for all the labor and materials required to complete the iron work of the Tower and Dome of the U. S. Courthouse and Postoffice building at Denver, Col., in accordance with the drawings and specification, copies of which may be had on application at this office or the office of the Superintendent. Each bid must be accompanied by a certified check for \$200. JAS. H. WINDRIM, Supervising Architect. November 7th, 1889.

SEALED PROPOSALS will be received at the office of the Superintendent of the Post-office, Court House, &c., building at Baltimore, Md., until 2 o'clock P. M., on the 22d day of November, 1889, for all the labor and materials required to put in place complete folding doors, slate shutters, iron grating in doorway, and painting iron work in the above-named building, in accordance with the drawing and specification, copies of which may be had on application at this office. Each bid must be accompanied by a certified check for \$100. JACKSON HOLDEN, Superintendent. November 6th, 1889.

SEALED BIDS with specifications will be received by the Board County Commissioners for Orange County, Florida, for the erection of four cells and a corridor with locks and appurtenances and with steps to the corridor similar to the cells and corridor now in the jail at Orlando, Orange County, Florida, the same to be placed on top of the present cells and corridor. Such bids to be forwarded to the Clerk of the Circuit Court for Orange County, Florida, at Orlando, Fla., on or before the first Monday in December, A. D. 1889. The County reserving the right to reject any and all bids. By order of the Board, B. F. WHITNER, Chairman. Attest, D. S. SHINE, Clerk.

SEALED PROPOSALS will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M., on the 2d day of December, 1889, for all the labor and materials required for the trench excavation, concrete foundations and stone and brick work of the U. S. Court House and Postoffice building at Birmingham, Ala., in accordance with the drawings and specifications, copies of which may be had on application at this office or the office of the Superintendent. Each bid must be accompanied by a certified check for \$500. JAS. H. WINDRIM, Supervising Architect. November 5, 1889.

SEALED PROPOSALS will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M., on the 13th day of December, 1889, for the iron floor construction of first floor of the U. S. Custom House, Postoffice, &c., building at Port Townsend, W. T., in accordance with drawing and specification, copies of which may be had on application at this office or the office of the Superintendent. Each bid must be accompanied by a certified check for \$100. JAS. H. WINDRIM, Supervising Architect. November 5th, 1889.

WANTS.

WANTED TO LEASE—A good manufacturing property, street railway, electric light, or similar concerns in one of the Southern States. Address Box 68, Williamsport, Pa.

WANTED—A situation as purchasing agent for a manufacturing house by a man 24 years old, with ten years' experience as clerk with one of the largest hardware houses in the country. Address "H," care of Manufacturers' Record.

WANTED PARTNER With Capital of \$5,000.

to take interest in established lumber and manufacturing business with \$10,000 already invested. Profits last year fifty per cent. Thorough investigation invited. Address

J. W. ROBERTSON & CO., Morganton, N. C.

WANTED.

Capital to Develop.

I want party with \$20,000 cash to join me in purchasing and developing New Town in mineral belt of Georgia. I regard it the finest opening for profitable investment in the South. Only responsible people need apply.

W. H. HOWCOTT,
NEW ORLEANS, LA.

SPECIAL INDUCEMENTS

OFFERED

MANUFACTURERS.

Manufacturing Sites, Mills, Farms,
and Village Property.

for sale by

J. L. MOON, Scottsville, Va.

Street Car Line
FOR SALE.

The Gadsden Land and Improvement Co. will sell their Line. Has 2½ miles Standard Gauge, 35 pound Steel Rail. Has Baldwin Motor and 2 Coaches. Operates 5 miles of Leased Road to Attalla. Road is earning over and above all expenses, lease included, six per cent. on eighty thousand dollars. Adress

R. B. KYLE, Pres. C. L. and I. Co.
GADSDEN, ALA.

FOR SALE.

12-ton ice plant (Pictet) all complete and in first-class order, can be had at one-third cost, and been in use only one year. For particulars inquire of

SO. FLORIDA FOUNDRY & MACHINE CO.
ORLANDO, FLA.

FOR SALE.

BRICK-YARD

With all New and Improved Machinery and Steam Dryers.

Now turning out 30,000 brick per day. Houses for superintendent and employees, together with 150 acres best brick in the State. Located at Riverside, on Coosa river and Georgia Pacific Ry. between Birmingham and Anniston, Ala. A rare chance for parties seeking an investment. For further particulars, address

MORRIS, ISON & CO.
RIVERSIDE, ALA.

FOR SALE

TO THE HIGHEST BIDDER,

THE TERRELL

Cotton and Woolen Mill,

located in Terrell, 32 miles east of Dallas, on the Texas & Pacific Railroad, consisting of one two-story brick, tin-roof building, 150x60 feet, and the machinery necessary for a 2,200-spindle mill, with 26 looms, all in position. Will be sold to the highest bidder on the 22d day of January, 1890. Address

TERRELL COTTON AND WOOLEN MFG. CO.
TERRELL, TEXAS.

RADFORD, VA.

Town Lots, Mineral Timber and Farm Lands.

We have many large and small tracts. Iron Ore, Coal, Glass, Sand, Marble, Building Stone, and Several Mineral Springs, of Wonderful Creative Properties.

The best of farming and grazing lands. No malaria. No mosquitoes. Salubrious climate. Gorgeous scenery. Water power unlimited. Factory sites donated. Property at first hands, so get in on "rock bottom." Write to, or call on

BARCLAY & CROCKETT,

The leading Real Estate Agents of Southwestern Virginia, RADFORD, VIRGINIA.

DENISON, TEXAS.

THE
Future Manufacturing and Commercial Center
OF THE
GREAT SOUTHWEST.

Denison Supplies the Coal for Texas.

She has at her gates the only **COKING COAL** of any value in the Mississippi Valley. To the Southwest lies the best **MAGNETIC IRON ORE** in the world, while to the north and southeast are fields of **BROWN HEMATITE ORE** of the finest grade. These ores must meet the **COKE** and **COAL** at DENISON and there be worked.

DENISON cannot be surpassed for **HEALTHFULNESS** and **BEAUTY** of location. Six divisions of railways terminate at Denison and are operated by her citizens.

DENISON has an abundant supply of pure, soft water and plenty of good, cheap **BUILDING MATERIAL**.

The attention of investors and those seeking advantageous locations for business or for manufacturing plants is invited to the opportunities presented at Denison.

MUNSON & BRO. HAVE SUPERIOR FACILITIES FOR THE SAFE AND PROFITABLE INVESTMENT AND HANDLING OF CAPITAL.

For information about **DENISON** and for bargains in **BUSINESS** and **RESIDENCE PROPERTY**, **ACRE PROPERTY** and **FARMS NEAR THE CITY**, write or call upon

MUNSON & BRO.

301 WOODWARD STREET,

DENISON, TEXAS.

A SPLENDID OPPORTUNITY

to secure a well-established Business in a Growing Southern City of over 80,000 inhabitants.

For Lease and Fixtures for Sale,

A Modern Boiler Shop

thoroughly equipped with power and water and the latest and most improved Punches, Shears, Rolls, Planers, Overhead Cranes, Riveting Machinery, Sheet Iron and Hand Tools. Railroad switch enters shop. Capacity for four hundred Boilers per year. The proper party can secure these works on favorable terms, and can pay for the tools out of orders that owners will guarantee. Address "INDUSTRY," care of Manufacturers' Record.

500 per cent. in Land

Adjoining city limits at Augusta, Georgia.

Largest Cotton Manufacturing City in the South.

2,600 acres lying west. High rolling land—the only available high land for city extension. Only needs rapid transit to become at once available, at \$1,000 to \$2,000 per acre. Can be bought now at \$50 to \$100 per acre in large or small tracts.

No Finer Suburban Lands in the South.

Investors and builders of dummy railroads invited to investigate this field for development of profitable enterprise.

ADDRESS

J. H. Alexander,
AUGUSTA, GA.

NOTICE TO MANUFACTURERS!

THE CITIZENS OF

DALLAS, TEXAS.

OFFER INDUCEMENTS

in the way of BONUSES, STOCK, SUBSCRIPTION, &c., to every reliable manufacturing enterprise that will, in the next six or twelve months locate within her borders.

FOR PARTICULARS ADDRESS THE

Webster-Wood Real Estate & Guarantee Co.
DALLAS, TEXAS.

To Those Looking For

MANUFACTURING SITES IN THE SOUTH.

The most desirable locations in the South for manufacturing wagons, stoves, agricultural implements, furniture, or for foundries, machine shops, rolling mills, muck bar mills, nail works, glass works, cotton or woolen mills, and tanneries, are to be found in Virginia along the line of the Norfolk & Western Railroad from Norfolk to Bristol, and upon its branch lines. Hard wood of every variety; pig iron from the furnaces at Lynchburg (2), Roanoke (2 in operation and 1 now under construction), Pulaski (1), Ivanhoe (1), Radford (1, to be built in 1890), Salem, Graham and Max Meadows (1 at each point now under construction); bar iron from the rolling mills at Roanoke and Lynchburg; coke and semi-bituminous coal from the Pocahontas Flat Top field; superior gas coals from mines on the Clinch Valley Extension; glass sand from Tazewell county; cotton from the markets of the Southern States, and wool from all the Western and Southwestern States and Territories at advantageous freight rates. Favorable freight rates made upon raw materials to all factories established upon its line, as well as to points in the United States and Territories upon the manufactured articles.

Those seeking new fields for manufacturing establishments should not fail to investigate the wonderful development in iron, coal and coke industries that has been made within the past five years along the line of the Norfolk & Western Railroad, and the advantages offered by the State of Virginia in the supply of cheap raw materials; by the Norfolk & Western Railroad in the matter of freight facilities and rates upon raw materials and for reaching home, far distant and foreign markets, and by the cities and towns along its line in the way of advantageous sites at moderate cost. Many of the cities and towns exempt manufacturing establishments from taxation for a series of years.

For further information as to freight rates and sources of supply of raw materials, apply to A. Pope, General Freight Agent, Roanoke, Va., or to

CHAS. G. EDDY,

Vice-President, Roanoke, Va.

FOR SALE.

DARLINGTON LAND IMPROVEMENT CO.

Lots within the incorporate limits of the town of Darlington, and fine farming lands adjacent, for sale. Railroad facilities good. Fine graded school in town. For further particulars apply to J. J. WARD, President and Treasurer of Darlington Land Improvement Co., Darlington, S. C.

FOR SALE.

A NEW 100 HORSE-POWER AUTOMATIC CUT-OFF ENGINE, at a Low Price.

Also a 100 horse power SLIDE VALVE ENGINE that has been in use 18 months, but is in most excellent running order. Can be seen running for a month. Will be sold at one-half its cost. Apply to

RICHMOND MACHINE WORKS, RICHMOND, IND.

Bargains in Machine Tools.

We have the following Machine Tools, taken mainly in exchange for those of our own manufacture. We will sell them low.

LATHES.

- 3-in x 2-ft 3-in. P. & W. Bench Hand Lathe, Good Order.
- 4-in x 2-ft P. & W. Bench Hand Lathes, ".
- 3-in x 3-ft P. & W. Bench Hand Lathes, ".
- 2-in x 2-ft 8-in. P. & W. Bench Turret Lathes, ".
- 2-in x 2-ft 6-in. P. & W. Bench Turret Lathes, ".
- Small P. & W. Screw Machinery Lathe, ".
- Medium P. & W. Screw Machinery Lathe, ".
- 2-in Star Hand Lathe, New.
- 12-in Fitchburg Lathe, Good Order.
- 12-in New Haven Lathe, Good Order.
- 12-in Putnam Lathe, Good Order.
- 12-in Gray Lathe, Good Order.
- 12-in New Haven Lathe, Good Order.
- 12-in George Baker Lathe, Good Order.
- 12-in Amherst Lathe, Good Order.
- 12-in L. W. Pond Lathe, Good Order.
- 12-in Ames Lathe, Good Order.
- 12-in W. & L. Lathe, Good Order.
- 12-in P. & W. Gap Turret Lathe, Good Order.
- 12-in Niles Shaving Lathe, with 3 tool shafting rest, Good Order.
- 12-in Niles Lathe, Good Order.
- 12-in W. & L. Lathe, Good Order.

PLANERS.

- 12-in. W. & L. Shaper Travelling Head, Good Order.
- 12-in. Hendey Shaper, Good Order.
- 12-in. Hendey Shaper, Good Order.
- Planer 24x4x8 New Haven, Good Order.
- Planer 30x4x8 Brattle, Good Order.
- Planer 30x4x8 Aldrich & Bailey, Good Order.
- Planer 30x4x8 Stevens, Good Order.
- Planer 30x4x8 Enterprise, Good Order.

MISCELLANEOUS.

- so-in. S. H. Biardelli Drill, Good Order.
 - so-in. S. H. Lathe and Mortise Drill, Good Order.
 - 12-in. S. H. Niles Drill, Good Order.
 - 24-in. G. Drill, Good Order.
 - so-in. H. & J. Radial Drill, Good Order.
 - Bartman Radial Drill, New.
 - No. 4 Garvin Miller, plain, Nearly New.
 - No. 4 Garvin Miller, plain, New.
 - No. 4 Garvin Miller with B. G. New.
 - No. 4 Spindle Valve Miller, Nearly New.
 - Single Punch and Shears, $\frac{1}{2}$ hole and $\frac{1}{2}$ iron, New.
 - Long & Alister Double Punch & Shear, $\frac{1}{2}$ in. hole, $\frac{1}{2}$ in. iron, Nearly New.
 - Wiley & Russell Bolt Cutter, Good Order.
 - Standish Foot-Power Hammer, New.
 - Williams & White 90-lb. Drop Hammer, G. Order.
 - Blundell & Co. Screw Press, Good Order.
 - Sturtevant Blower, Good Order.
- Write for Prices.
New additions constantly made to this list.
Complete estimates made on outfit.

THE LODGE & DAVIS MACHINE TOOL CO. Cincinnati, Ohio.

Manufacturers of Engine Lathes, Shapers, Upright Drills, etc. Dealers in iron and Brass Working Machinery.

Western Store 68 & 70 S. Canal St., Chicago.

JAS. P. WITHEROW, ENGINEER & CONTRACTOR,

Furnace & Steel

Plant Construction.

PITTSBURGH, U. S. A.

Blast Furnaces and Steel Works designed and erected complete in every detail ready for operation. Special attention given to the manufacture of

* HEINE *

Safety Water Tube Boilers.

Owning an extensive manufacturing plant, I can guarantee promptness in execution, and satisfaction in any contracts undertaken by me.

A Good Investment

For any one who wishes to build up a

Manufacturing Industry IN THE SOUTH.

I will sell a tract of 320 acres land, situated near the central part of Alabama, near to the iron and coal fields, and surrounded by the cotton fields and timbered lands of the State.

The tract is well timbered, with good water-power facilities for driving machinery. There are on the premises, in good working order, two water-power wheels, one driving a set of 44-inch grist rocks, and the other a 45-saw cotton gin. The natural advantages for building up a manufacturing industry in wood and fabrics are excellent. Write for full particulars.

D. H. Loughridge,
SPROTT, ALA.

CHARLOTTESVILLE, VA.

OFFERS

Great Advantages and Liberal Inducements to Manufacturers
DESIRING TO LOCATE SOUTH.

Railroad Facilities, Cheap Rates and Rapid Transportation to all Points Unexcelled.

PERFECT CLIMATE.

UNLIMITED SUPPLY OF EXCELLENT WATER.

Gas, Electricity and Street Railway. Free Schools and Churches. Different Lines of Manufacturing Enterprises Already in Successful Operation Here.

A LIVE AND GROWING PLACE.

HOME CAPITAL WILL JOIN IN THE ESTABLISHMENT AND OPERATION OF FACTORIES.

COME AND SEE, OR WRITE TO **JOHN M. WHITE**, President.

CHARLOTTESVILLE INDUSTRIAL & LAND IMPROVEMENT CO., Charlottesville, Va.

SUMTER

South Carolina,

is situated in Sumter county, midway between Florence and Columbia—40 miles from each—95 miles from Charleston, 125 from Augusta, Ga., and 136 from Wilmington, N. C., in the heart of an

EXCELLENT AGRICULTURAL COUNTRY.

It is on the Wilmington, Columbia & Augusta Railroad, and is the terminus of the Central of South Carolina as well as present terminus of the Eutawville Railroad, which is in course of construction to connect with railroads from Norfolk, with prospects of another in the near future.

It has a rapidly-increasing population, which at present numbers about 4,000.

ITS HEALTH IS UNSURPASSED

and it is one of the finest locations in the South for a

Winter Resort

for those seeking refuge from the cold blasts of the North.

A \$50,000 HOTEL is now under discussion, and any reliable hotel man who would like to engage in the undertaking can learn of something to his advantage by addressing Mayor Mood.

ICE FACTORY

is wanted; an Electric-Light Plant is now being put in, and Water Works are in progress.

Those seeking locations for

HOMES

or business will do well to correspond with the people of Sumter.

CAMDEN,

The Capital of Kershaw County,
South Carolina.

This ancient and historic town is noted for its dry atmosphere, pure water, beautiful scenery, healthful climate and refined society.

It is the center of a rich agricultural country, which contains great natural resources. Hardwoods of many species are abundant, and great forests of long leaf pine, which impregnate the air with terpenine odors. Several good hotels entertain travelers, and two are carefully conducted for the especial comfort of northern health and pleasure seekers.

Manufacturing of all kinds can be done here advantageously. Two railroads, the South Carolina and the Charleston, Cincinnati & Chicago, furnish transportation to all parts of the country. Two telegraph lines, the Postal and the Western Union, have offices here.

Churches and schools are numerous and well sustained.

A cotton mill company has been organized, and the first installment of twenty per cent. has been called in.

Land is cheap. The climate is salubrious, and subject to no extremes during the year.

Camden invites capitalists, manufacturers, pleasure and health seekers and sportsmen to visit the city and examine the advantages it offers to all.

All inquiries will be promptly answered by the undersigned, official representative of the intendant and warders.

DR. JOHN W. CORBETT
Or the President of the Board of Trade.

\$1,000 Bonus.

FREE SITES!

TO MAKE A

Profitable Investment,

Correspond with Secretary New Berne Board of Trade.

New Berne, North Carolina

IN RELATION TO THE

MANY SUPERIOR ADVANTAGES

—AND—

Ample Inducements

that **NEW BERNE** is holding out to those desiring to establish

FACTORIES WHERE THEY WILL PAY.

We are in the center of a most magnificent timber region. Wood of all kinds in abundance, and the best facilities for transporting to the mill and from the mill to market.

We are very anxious to develop our section by establishing factories. We have everything except capital, and we will make it pay capital to come to us.

We know that people flock to the booming sections, but still we do not want a boom, but a good, substantial and steady growth, such as we have had for the past ten years. The point is now reached with us that we can go no farther without capital to assist, and it will pay capital to investigate what we have to offer.

New Berne is now offering every inducement possible to aid manufacturing investors who will establish enterprises adapted to the natural advantages of this section. Address

Secretary New Berne Board of Trade

GEO. T. McWHORTER, President, Chickasaw, Ala.

JAS. M. ALLEN, Secretary, Waterloo, Ala.

Capital Stock \$200,000.

THE

Waterloo Land, Mining & Mfg. Co.

of Waterloo, Lauderdale Co., Ala.

will encourage the location of manufacturing and industrial enterprises in the town of Waterloo by donations of town lots, mineral and timber lands, and stock of the company. Persons who contemplate engaging in enterprises of this character in North Alabama are requested to consider the advantages, present and prospective, of this point before deciding to locate elsewhere. Waterloo is situated on the north bank of the Tennessee river, below Colbert Shoals and consequently at the head of summer navigation on said river. During low-water stage light draft steamers run from Waterloo to Florence, Sheffield and other points above the shoals, freight being transferred at Waterloo. At this season goods may be shipped from St. Louis, Cincinnati, Louisville, Evansville and all Western river cities to Waterloo cheaper than to any other town in Alabama Chickasaw excepted. Waterloo is in the heart of the mineral belt, the immense beds of iron ore of Wayne and Lauderdale Counties lying in close proximity (5 to 10 miles). Limestone, silica and kaolin are abundant and close. The largest area of virgin forest in North Alabama lies in sight. The Land Company owns large bodies of this together with many valuable town lots. The water supply is abundant and pure. Scores of springs bubble up within the town limits and the limpid waters of Second Creek wash the eastern border. The health of the community is unexcelled and the cost of living cheap. This is the largest shipping point for tan bark in the state. Present price of bark at landing \$4.50 per cord. Special facilities for tanning leather. The Land Company will donate a large body of fine timber and mineral land in a block to secure the construction of a railroad, north or east from Waterloo, such a road being needed in connection with the unequalled facilities of water transportation enjoyed by the town. Liberal aid will be given to persons who will locate industries here that give employment to labor and add value to raw material.

No matter what you intend to manufacture, consult the Waterloo Land, Mining & Manufacturing Co. and learn what facilities for the prosecution of your business the place enjoys and what inducements will be offered you to come. All questions truthfully and fairly answered.

For further information consult the President, Secretary or Hon. Hiram Richardson, Vice-President, Waterloo, Ala.

Classified Index of Advertisers.

[FOR "ALPHABETICAL INDEX" WITH PAGES, SEE PAGE 36.]

Air Compressors. Ingersoll-Sergeant Rock Drill Co. Rand Drill Co. Anti-Friction Metal. Magnolia Anti-Friction Metal Co. Asbestos. Chalmers-Spence Co. Balling Press. Boomer & Boscher Press Co. Bankers & Brokers Alex. Brown & Sons. Wilson, Colston & Co. Jno. L. Williams & Son. Middendorf, Oliver & Co Merchants & Farmers Bank. Frederick Taylor & Co. P. J. Goodhart & Co. Winner Investment Co. Barrel Machinery (See Wood-Working Machinery.) E. & B. Holmes. Bath Tubs. Haines, Jones & Cadbury Co. Bearings. North American Metal- ine Co. Bells. Henry McShane & Co. Belting. Akron Belting Co. Chesapeake Belting Co. Chicago Raw Hide Mfg. Co. Gandy Belting Co. N. Y. Belt & Pack Co. Page Belting Co. Shultz Belting Co. Belting (Chain). Jeffrey Mfg. Co. Link Belt Enginer's Co. R. Swormstedt & Co. Belt Holders. W. R. Sankey & Co. Blacksmiths' Tools. Buffalo Forge Co. Fulton Iron & En. Wks. Blowers and Ex- haust Fans. Buffalo Forge Co. B. F. Sturtevant. Geo. P. Clark. Boat Builders (Steam.) Chas. P. Willard & Co. Boilers. (See also Machinery.) Abendroth & Root Mfg. Co. Casey Boiler Mfg. Co. Babcock & Wilcox Co. Frick Co. J. T. Foley & Co. Harrison Stly. B'l'r. Wks. R. Munroe & Son. Rochester Machine Tool Wks. Skinner Engine Co. Geo. W. Tiff, Sons & Co Cleveland & Hardwick Lowell Stm. Boiler Wks. Campbell & Zell Co. Webster, Camp & Lane Machine Co. Boiler Appliances Curtis Regulator Co. Reliance Gauge Co. Stilwell & Bierce Mfg. Co. Chalmers-Spence Co. Hoopes Mfg. Co. Boiler Covering. Chalmers-Spence Co. Boiler Makers' Supplies. New Doty Mfg. Co. Hetherington & Nason Boiler Setting. Jarvis Engineering Co. Bolts and Rivets. Hoopes & Townsend. Brick & Clay Work- ing Machinery & Supplies. D. J. C. Arnold. Chambers Bros. Co. Fletcher & Thomas. Henry Martin Brick Ma- chine Mfg. Co. C. W. Raymond & Co. Chas. Kaestner & Co. Alex. K. Rarig & Co. Eureka Brick Machine Mfg. Co. P. L. Sword & Son. Business Opportu- nities. Webster-Wood Real Es- tate & Guarantee Co. J. H. Alexander. Ezra F. Landis. Chas. G. Eddy. Morris, Isom & Co. J. L. Moon. D. H. Lougbridge. R. B. Kyle, Prest. Ferrell Cotton & Wool en Mfg. Co. Canning Mchry. E. W. Bliss Co. Niagara Stamping & Tool Co. Stiles & Parker Press Co. Warfield Mfg. Co. C. Palmer Mfg. Co. Card Clothing. (See Textile Machinery and Supplies.) Cars. (See R. R. Equipment and Supplies.) Casting. Jno. N. Marquette. Todd Pulley & Shafting. Wks. Adams & Price Locomo- tive & Machine Wks. A. Whitney & Sons. Knoxville Car Whl. Co. Car Wheels. Knoxville Car Whl. Co. A. Whitney & Sons. Russel Wheel & Foun- dry Co. Car Works Equip- ment. Geo. Place. Cement. Erskine W. Fisher. Chemist. J. H. Pratt. Cloth Folders. W. A. Richardson & Co. Clutches. Hill Clutch Works. The Moore & White Co. Construction Companies. Scovel & Irwin Cons. Co. Commonw'lth Cons. Co. Miller & Bierce. Simpkin & Hillyer. Fort Worth Loan and Construction Co. Contractors' Sup- plies. Con'b'r's Plant Mfg. Co. Kilbourn & Jacobs Mfg. Co. Bucyrus Engy. & Mfg. Co. Ryan & McDonald. Stuebner & Woods. F. C. Austin Mfg. Co. Contracting Engi- neers and Ma- chinsts. D. A. Tompkins & Co. Scovel & Irwin Cons. Co. Commonw'lth Cons. Co. Miller & Bierce. Simpkin & Hillyer. Jas. P. Withrow. Conveyors. H. W. Caldwell. McLanahan & Stone. The Jeffrey Mfg. Co. Link Bell Engineering Co. Corrugated Iron. Canton Steel Roof'g Co. Cincinnati Corrug'g Co. Globe Iron Roof'g & Corrugating Co. Holton Iron Roof'g Co. W. G. Hyndman & Co. Kanneberg Roofing Co. Cambridge Roofing Co. Cotton Gins. Milburn Gin & Mch. Co. Van Winkle Gin & Machinery Co. Cotton Gin Lubri- cator. C. H. Merry. Cotton Seed Oil Machinery. Wm. Taylor & Sons. Van Winkle Gin & Ma- chinery Co. Cranes. Phoenix Iron Works. Walker Mfg. Co. Crushers (Corn and Cob). Richm'd City Mill Wks. Waldron & Sprout. Crushers (Ore, Stone, &c.) Gates Iron Works. F. H. Moore. James Murray & Son. Wiswell Electric Min- ing Machinery Co. Nelsonville Foundry & Machine Co. Foos Mfg. Co. Dairy Supplies. John S. Carter. R. M. Johnson. Derricks. Contractors' Plant Mfg. Co. Dredges & Steam Shovels. Copeland & Bacon. Vulcan Iron Works. Drills (Rock). M. C. Bullock Mfg. Co. Diamond Prospecting Co. Ingersoll-Sergeant Rock Drill Co. Rand Drill Co. Drills (Wood and Metal). W. F. & Jno. Barnes Co. Cleveld'v Twist Drill Co. E. F. Garvin. Lodge & Davis Machine Tool Co. Friction Cones. Evans Frict'g Cone Co. Sigourney Tool Co. Syracuse Twist Drill Co. Drop Forgings. Belden Machine Co. Dry Kilns. Standard Dry Kiln Co. B. F. Sturtevant. Dyeing Mchry. H. W. Butterworth & Sons. Electric Lighting. Brush Electric Co. Thomson-Houston Elec- tric Co. Sawyer-Man Elect. Co. Heisler Elec. Light Co. Southern Electrical Sup- ply Co. Westmorn So. Electric Mfg. Co. Electric Railway and Motors. Thomson-Houston Elec- tric Co. Brush Electric Light Co. Daft Electric Light Co. Electrical Engi- neers. C. S. Van Nuis. W. H. Cole. Electrical Sup- plies. Phoenix Incan. Lamp Co. Southern Electrical Sup- ply Co. Elevators. James Bates. Jeffrey Mfg. Co. Morse, Williams & Co. Stokes & Parrish Mch. Co. Louisville Machine & Elevator Works. Emery Wheels. (See Grinding and Pol- ishing Machinery.) Engines. (See also Machinery.) Ball Engine Co. Buckeye Engine Co. Castile Engine Works. Chandler & Taylor. Fishkill Land'g Mch. Co. Frick Co. J. T. Foley & Co. W. A. Harris St. En. Co. Skinner Engine Co. Southwark Foundry & Machine Co. Geo. W. Tift, Sons & Co The J. T. Noye Mfg. Co. Rochester Mch. Tool Wks. Cleveland & Hardwick Westinghouse Mch. Co. The D. A. Tompkins Co. B. W. Payne & Sons. Russell & Co. Globe Machine Co. Gordon, Strobel & Lau- reau Dirigo Eng. & Mch. Co. Valley Iron Works. Webster, Camp & Lane Machine Co. Engines (Gas). Otto Gas Engine Wks. Van Duzen Gas En. Co. Engines (Kero- sene). Racine Hard. Mfg. Co. Rochester Machine Tool Works. Engines & Boilers (Marine). Chas. P. Willard & Co. Feed Wat'r Heater Kroeschell & Bourge's Warren Webster & Co. Wainwright Mfg. Co. Fencing. Dufur & Co. Fred. J. Meyers Mfg. Co. Consolid'd Ice Mch. Co. Louisville Machine & Elevator Co. Frick Co. Arctic Ice Mch. Mfg. Co. S. Florida Foundry & Machine Co. Ring Ref. & Ice Mch. Co. Ice Tools. Peter Gerlach & Co. Injectors. Felthousen & Sherwood Insulated Wires & Cables. Okonite Co. Southern Electrical Sup- ply Co. Insurance. Employers' Liab. Assur- ance Corporation. Edw. A. Swain. Insurance (Boiler). Hartford St. Boiler Ins. and Insurance Co. Iron Working Machinery. E. Harrington, Son & Co Derrick & Harvey. E. E. Garvin & Co. Lodge & Davis Machine Tool Co. Lathe & Morse Tool Co. Globe Machine Co. Jacks. Joyce, Criddle & Co. Jacks (Hydraulic). Watson & Stillman. Furnace Builders. Gordon, Strobel & Lau- reau. Furnace for Boilers. Foundry Facings and Supplies. S. Obermayer Foundry Supply Mfg. Co. Foundry Mchry. Victor Colliau. Knoxville Car Whl. Co. Jas. P. Withrow. Friction Cones. Evans Frict'g Cone Co. Sigourney Tool Co. Syracuse Twist Drill Co. Furnace Supplies. Wm. C. Robinson & Son Joe. Dixon Crucible Co. A. W. Harris Oil Co. G. C. McNeil. Gas (Light & Fuel). Illum'g & Fuel Gas Co. B. F. Sturtevant. Gauge Glass. Bray & Nickerson Auto- matic Gauge Glass Co. Pancoast & Maule. Glass Cutting Tools. Thos. J. Andress. Grain Elevator Supplies. H. W. Caldwell. Grate Bar. Phenix Iron Foundry. Grinding and Pol- ishing Mchry. Springfield Glue and Emery Wheel Co. Waltham Emery Wl. Co Tanite Co. Northampton Emery Wheel Co. Norton Emery Wheel Co. Hack Saws. Millers Falls Co. Handle Mchry. (See Wood-working Ma- chinery.) Hardware Spec- cialties. American Machine Co. Empire Port. Forc. Co. Thos. J. Andress. Fred. J. Meyers Mfg. Co. Van Wagner & Wil- liams Co. Udell Woodenv'r Wks. Cronk Hanger Co. Wier & Wilson. Covert Mfg. Co. Empire Wringer Co. Heating Appa- ratus. A. A. Griffing Iron Co. Ezra F. Landis. Pierce, Butler & Pierce Mfg. Co. B. F. Sturtevant. Hoisting Ma- chinery. M. C. Bullock Mfg. Co. Contractors' Pit. Mfg. Co. Copeland & Bacon. Diamond Prospect. Co. Knoxville Car Whl. Co. Lidgerwood Mfg. Co. Stokes & Parrish Ma- chine Co. Ryan & McDonald. Webster, Camp & Lane Machine Co. Nelsonville Foundry & Machine Co. Chain Hoist. E. Harrington, Son & Co Rope Hoist. Fulton Iron & En. Wks. Hose. N. Y. Belt & Pack Co. Waterbury Rubber Co. Hotels. Colonade, (Phila.) Stillman, (Cleveland.) Niagara, (Buffalo.) Hydrants. Ludlow Valve Mfg. Co. Hydraulic Ma- chinery. Watson & Stillman. Rife's Hydraulic Engine Mfg. Co. Ice-Making Ma- chinery. David Boyle. Consolid'd Ice Mch. Co. Louisville Machine & Elevator Co. Frick Co. Arctic Ice Mch. Mfg. Co. S. Florida Foundry & Machine Co. Ring Ref. & Ice Mch. Co. Ice Tools. Peter Gerlach & Co. Injectors. Felthousen & Sherwood Insulated Wires & Cables. Okonite Co. Southern Electrical Sup- ply Co. Insurance. Employers' Liab. Assur- ance Corporation. Edw. A. Swain. Insurance (Boiler). Hartford St. Boiler Ins. and Insurance Co. Iron Working Machinery. E. Harrington, Son & Co Derrick & Harvey. E. E. Garvin & Co. Lodge & Davis Machine Tool Co. Lathe & Morse Tool Co. Globe Machine Co. Jacks. Joyce, Criddle & Co. Jacks (Hydraulic). Watson & Stillman. Furnace Builders. Gordon, Strobel & Lau- reau. Furnace for Boilers. Foundry Facings and Supplies. S. Obermayer Foundry Supply Mfg. Co. Foundry Mchry. Victor Colliau. Knoxville Car Whl. Co. Jas. P. Withrow. Friction Cones. Evans Frict'g Cone Co. Sigourney Tool Co. Syracuse Twist Drill Co. Furnace Supplies. Wm. C. Robinson & Son Joe. Dixon Crucible Co. A. W. Harris Oil Co. G. C. McNeil. Lumber. W. Edwin Perego & Co. A. C. Danner. Johnson, Shryock & Co. Thos. J. Shryock & Co. E. B. Hunting & Co. Glass Cutting Tools. Thos. J. Andress. Locomotives. (See also R. R. Equipm't and Supplies.) Richmond Loc. & Mch. Wks. H. K. Porter & Co. Baldwin Loco. Works. Machinery. Jos. Edwin Crucible Co. Chattanooga Paint Co. Druid Felt Co. N. T. Fate & Co. Paint. Jos. Edwin Crucible Co. Chattanooga Paint Co. Druid Felt Co. N. T. Fate & Co. Paper Mill Ma- chinery. The Moore & White Co. Perforated Metal. Robt. Aitchison Perfor. Metal Co. Harrington & King Per- forating Co. Wks. The Berger Mfg. Co. Lowe & Tucker. Druid Felt Co. Merchant & Co. Rubber Goods. N. Y. Belt'g & Pack Co. Waterbury Rubber Co. Rustless Iron. Weiss Rustless Iron Co. Saws. (See also Woodworking Machinery.) Frank W. Swett. Peter Gerlach & Co. Chattanooga Saw Wks. W. B. Barry Saw and Supply Co. Henry Diston & Sons. The Detroit Saw Wks. Saw Gummer. N. Y. Belt'g & Pack Co. Saw Flier and Gummer. Sam'l. C. Rogers & Co. Saw Mill Machin'y. Frick Co. De Loach Mill Mfg. Co. Richmond Mch. Wks. A. C. Powell & Son. Scales. Riehle Bros. Standard Scale Co. Hubbard & Co. Pipe Covering. Shields & Brown Co. Chalmers-Spence Co. Pipe Handling Tools. Pancoast & Maule. D. Saunders' Sons. Billings & Spencer Co. Pipe Fittings. Pancoast & Maule. Plantation Engines. The Birdsall Co. Plumbers' Sup- plies & Tools. Milner & Ketting. Haines, Jones & Cad- bury Co. Pancoast & Maule. D. Saunders' Sons. McLanahan & Stone. Silver & Deming Co. Machinery & Tools (second Hand). J. C. Saxton. N. Y. Machinery Depot Prentiss Tool & Sup. Co. Casey Boiler Mfg. Co. Frick Co. L. F. Seyfort. S. C. Forsyth Mch. Co. Lowell Stm. Boiler Wks. Box 110, Cleveland. E. G. Garvin & Co. Dirigo Eng. & Mch. Co. Machinists' Sup- plies. H. A. Rogers. Hetherington & Nason. Mill Engineers. C. R. Makepeace & Co. Lockwood, Greene & Co. Mill Stones. B. F. Starr & Co. Mill Supplies. Peter Gerlach & Co. Rope Hoist. Fulton Iron & En. Wks. Hose. N. Y. Belt & Pack Co. Waterbury Rubber Co. Hotels. Colonnade, (Phila.) Stillman, (Cleveland.) Niagara, (Buffalo.) Hydrants. Ludlow Valve Mfg. Co. Hydraulic Ma- chinery. Watson & Stillman. Rife's Hydraulic Engine Mfg. Co. Mining, Quarrying and Stone-Cut- ting Mchry. Ingersoll-Sergeant Rock Drill Co. Diamond Prospecting Co. Wiswell Electric Mini'g Machinery Co. M. E. Bullock Mfg. Co. Copeland & Bacon. Rand Drill Co. Jeffrey Mfg. Co. Webster Camp & Lane Machine Co. Lincoln Iron Works. Beckett Foun. & Mch. Co. Steam Stone Cutter Co. Nelsonville Foundry & Machine Co. Ice Tools. Peter Gerlach & Co. Miscellaneous. R. C. Smith. M. A. Byrnes. Ryder & Death. Electric Fare Box Co. C. A. Gamblin Mfg. Co. Elias Edmonds. The Bradstreet Co. Electric Power. Ligowsky Clay Pig'n Co Charles M. Steff. Bernhard Dietz. John Ryan Co. Ault & Wilborg. Record Printing House. Derby & Kinner Des. Chas. Catlett, Gen. Man. Edw. Allen. Injectors. Felthousen & Sherwood Insulated Wires & Cables. Okonite Co. Southern Electrical Sup- ply Co. Insurance. Employers' Liab. Assur- ance Corporation. Edw. A. Swain. Insurance (Boiler). Hartford St. Boiler Ins. and Insurance Co. Iron Working Machinery. E. Harrington, Son & Co Derrick & Harvey. E. E. Garvin & Co. Lodge & Davis Machine Tool Co. Lathe & Morse Tool Co. Globe Machine Co. Jacks. Joyce, Criddle & Co. Jacks (Hydraulic). Watson & Stillman. Furnace Builders. Gordon, Strobel & Lau- reau. Furnace for Boilers. Foundry Facings and Supplies. S. Obermayer Foundry Supply Mfg. Co. Foundry Mchry. Victor Colliau. Knoxville Car Whl. Co. Jas. P. Withrow. Friction Cones. Evans Frict'g Cone Co. Sigourney Tool Co. Syracuse Twist Drill Co. Furnace Supplies. Wm. C. Robinson & Son Joe. Dixon Crucible Co. A. W. Harris Oil Co. G. C. McNeil. Paint. Jos. Edwin Crucible Co. Chattanooga Paint Co. Druid Felt Co. N. T. Fate & Co. Lumber. The Berger Mfg. Co. Lowe & Tucker. Druid Felt Co. Merchant & Co. Rubber Goods. N. Y. Belt'g & Pack Co. Waterbury Rubber Co. Rustless Iron. Weiss Rustless Iron Co. Saws. (See also Woodworking Machinery.) Frank W. Swett. Peter Gerlach & Co. Chattanooga Saw Wks. W. B. Barry Saw and Supply Co. Henry Diston & Sons. The Detroit Saw Wks. Saw Gummer. N. Y. Belt'g & Pack Co. Saw Flier and Gummer. Sam'l. C. Rogers & Co. Saw Mill Machin'y. Frick Co. De Loach Mill Mfg. Co. Richmond Mch. Wks. A. C. Powell & Son. Scales. Riehle Bros. Standard Scale Co. Hubbard & Co. Pipe Covering. Shields & Brown Co. Chalmers-Spence Co. Pipe Handling Tools. Pancoast & Maule. D. Saunders' Sons. Billings & Spencer Co. Pipe Fittings. Pancoast & Maule. Plantation Engines. The Birdsall Co. Plumbers' Sup- plies & Tools. Milner & Ketting. Haines, Jones & Cad- bury Co. Pancoast & Maule. D. Saunders' Sons. McLanahan & Stone. Silver & Deming Co. Machinery & Tools (second Hand). J. C. Saxton. N. Y. Machinery Depot Prentiss Tool & Sup. Co. Casey Boiler Mfg. Co. Frick Co. L. F. Seyfort. S. C. Forsyth Mch. Co. Lowell Stm. Boiler Wks. Box 110, Cleveland. E. G. Garvin & Co. Dirigo Eng. & Mch. Co. Machinery & Tools (second Hand). J. C. Saxton. N. Y. Machinery Depot Prentiss Tool & Sup. Co. Casey Boiler Mfg. Co. Frick Co. L. F. Seyfort. S. C. Forsyth Mch. Co. Lowell Stm. Boiler Wks. Box 110, Cleveland. E. G. Garvin & Co. Dirigo Eng. & Mch. Co. Machinery & Tools (second Hand). J. C. Saxton. N. Y. Machinery Depot Prentiss Tool & Sup. Co. Casey Boiler Mfg. Co. Frick Co. L. F. Seyfort. S. C. Forsyth Mch. Co. Lowell Stm. Boiler Wks. Box 110, Cleveland. E. G. Garvin & Co. Dirigo Eng. & Mch. Co. Machinery & Tools (second Hand). J. C. Saxton. N. Y. Machinery Depot Prentiss Tool & Sup. Co. Casey Boiler Mfg. Co. Frick Co. L. F. Seyfort. S. C. Forsyth Mch. Co. Lowell Stm. Boiler Wks. Box 110, Cleveland. E. G. Garvin & Co. Dirigo Eng. & Mch. Co. Machinery & Tools (second Hand). J. C. Saxton. N. Y. Machinery Depot Prentiss Tool & Sup. Co. Casey Boiler Mfg. Co. Frick Co. L. F. Seyfort. S. C. Forsyth Mch. Co. Lowell Stm. Boiler Wks. Box 110, Cleveland. E. G. Garvin & Co. Dirigo Eng. & Mch. Co. Machinery & Tools (second Hand). J. C. Saxton. N. Y. Machinery Depot Prentiss Tool & Sup. Co. Casey Boiler Mfg. Co. Frick Co. L. F. Seyfort. S. C. Forsyth Mch. Co. Lowell Stm. Boiler Wks. Box 110, Cleveland. E. G. Garvin & Co. Dirigo Eng. & Mch. Co. Machinery & Tools (second Hand). J. C. Saxton. N. Y. Machinery Depot Prentiss Tool & Sup. Co. Casey Boiler Mfg. Co. Frick Co. L. F. Seyfort. S. C. Forsyth Mch. Co. Lowell Stm. Boiler Wks. Box 110, Cleveland. E. G. Garvin & Co. Dirigo Eng. & Mch. Co. Machinery & Tools (second Hand). J. C. Saxton. N. Y. Machinery Depot Prentiss Tool & Sup. Co. Casey Boiler Mfg. Co. Frick Co. L. F. Seyfort. S. C. Forsyth Mch. Co. Lowell Stm. Boiler Wks. Box 110, Cleveland. E. G. Garvin & Co. Dirigo Eng. & Mch. Co. Machinery & Tools (second Hand). J. C. Saxton. N. Y. Machinery Depot Prentiss Tool & Sup. Co. Casey Boiler Mfg. Co. Frick Co. L. F. Seyfort. S. C. Forsyth Mch. Co. Lowell Stm. Boiler Wks. Box 110, Cleveland. E. G. Garvin & Co. Dirigo Eng. & Mch. Co. Machinery & Tools (second Hand). J. C. Saxton. N. Y. Machinery Depot Prentiss Tool & Sup. Co. Casey Boiler Mfg. Co. Frick Co. L. F. Seyfort. S. C. Forsyth Mch. Co. Lowell Stm. Boiler Wks. Box 110, Cleveland. E. G. Garvin & Co. Dirigo Eng. & Mch. Co. Machinery & Tools (second Hand). J. C. Saxton. N. Y. Machinery Depot Prentiss Tool & Sup. Co. Casey Boiler Mfg. Co. Frick Co. L. F. Seyfort. S. C. Forsyth Mch. Co. Lowell Stm. Boiler Wks. Box 110, Cleveland. E. G. Garvin & Co. Dirigo Eng. & Mch. Co. Machinery & Tools (second Hand). J. C. Saxton. N. Y. Machinery Depot Prentiss Tool & Sup. Co. Casey Boiler Mfg. Co. Frick Co. L. F. Seyfort. S. C. Forsyth Mch. Co. Lowell Stm. Boiler Wks. Box 110, Cleveland. E. G. Garvin & Co. Dirigo Eng. & Mch. Co. Machinery & Tools (second Hand). J. C. Saxton. N. Y. Machinery Depot Prentiss Tool & Sup. Co. Casey Boiler Mfg. Co. Frick Co. L. F. Seyfort. S. C. Forsyth Mch. Co. Lowell Stm. Boiler Wks. Box 110, Cleveland. E. G. Garvin & Co. Dirigo Eng. & Mch. Co. Machinery & Tools (second Hand). J. C. Saxton. N. Y. Machinery Depot Prentiss Tool & Sup. Co. Casey Boiler Mfg. Co. Frick Co. L. F. Seyfort. S. C. Forsyth Mch. Co. Lowell Stm. Boiler Wks. Box 110, Cleveland. E. G. Garvin & Co. Dirigo Eng. & Mch. Co. Machinery & Tools (second Hand). J. C. Saxton. N. Y. Machinery Depot Prentiss Tool & Sup. Co. Casey Boiler Mfg. Co. Frick Co. L. F. Seyfort. S. C. Forsyth Mch. Co. Lowell Stm. Boiler Wks. Box 110, Cleveland. E. G. Garvin & Co. Dirigo Eng. & Mch. Co. Machinery & Tools (second Hand). J. C. Saxton. N. Y. Machinery Depot Prentiss Tool & Sup. Co. Casey Boiler Mfg. Co. Frick Co. L. F. Seyfort. S. C. Forsyth Mch. Co. Lowell Stm. Boiler Wks. Box 110, Cleveland. E. G. Garvin & Co. Dirigo Eng. & Mch. Co. Machinery & Tools (second Hand). J. C. Saxton. N. Y. Machinery Depot Prentiss Tool & Sup. Co. Casey Boiler Mfg. Co. Frick Co. L. F. Seyfort. S. C. Forsyth Mch. Co. Lowell Stm. Boiler Wks. Box 110, Cleveland. E. G. Garvin & Co. Dirigo Eng. & Mch. Co. Machinery & Tools (second Hand). J. C. Saxton. N. Y. Machinery Depot Prentiss Tool & Sup. Co. Casey Boiler Mfg. Co. Frick Co. L. F. Seyfort. S. C. Forsyth Mch. Co. Lowell Stm. Boiler Wks. Box 110, Cleveland. E. G. Garvin & Co. Dirigo Eng. & Mch. Co. Machinery & Tools (second Hand). J. C. Saxton. N. Y. Machinery Depot Prentiss Tool & Sup. Co. Casey Boiler Mfg. Co. Frick Co. L. F. Seyfort. S. C. Forsyth Mch. Co. Lowell Stm. Boiler Wks. Box 110, Cleveland. E. G. Garvin & Co. Dirigo Eng. & Mch. Co. Machinery & Tools (second Hand). J. C. Saxton. N. Y. Machinery Depot Prentiss Tool & Sup. Co. Casey Boiler Mfg. Co. Frick Co. L. F. Seyfort. S. C. Forsyth Mch. Co. Lowell Stm. Boiler Wks. Box 110, Cleveland. E. G. Garvin & Co. Dirigo Eng. & Mch. Co. Machinery & Tools (second Hand). J. C. Saxton. N. Y. Machinery Depot Prentiss Tool & Sup. Co. Casey Boiler Mfg. Co. Frick Co. L. F. Seyfort. S. C. Forsyth Mch. Co. Lowell Stm. Boiler Wks. Box 110, Cleveland. E. G. Garvin & Co. Dirigo Eng. & Mch. Co. Machinery & Tools (second Hand). J. C. Saxton. N. Y. Machinery Depot Prentiss Tool & Sup. Co. Casey Boiler Mfg. Co. Frick Co. L. F. Seyfort. S. C. Forsyth Mch. Co. Lowell Stm. Boiler Wks. Box 110, Cleveland. E. G. Garvin & Co. Dirigo Eng. &

Alphabetical Index of Advertisers.

[FOR "CLASSIFIED INDEX," SEE PAGE 35.]

A	D	I	Richmond Standard Spike Co.
Abbott, D. S.....	Daft Electric Light Co.....	1 Illuminating & Fuel Gas Co.....	57
Abendroth & Root Mfg. Co.....	Danner, A. C.....	Indiana Machine Works.....	6
Adams, S., & Sons.....	Davidson Steam Pump Co.....	"Industry".....	33
Addyton Pipe & Steel Co.....	Dean Bros. Steam Pump Works.....	Ingersoll-Sergeant Rock Drill Co.	1
Aerated Fuel Co.....	Deane Steam Pump Co.....	Jarvis Engineering Co.....	4
Aitchison, Robt., Perf. Metal Co	Defiance Machine Works.....	Jeffrey Mfg. Co.....	44, 47
Akron Belting Co.....	De Loach Mill Mfg. Co.....	Jenkins Bros.....	5
Allen, Edw.....	Denison, Texas.....	Johnson, R. M.....	44
Alexander, J. H.....	Derby & Kilmer Desk Co.....	Johnson, Shryock & Co.....	50
American Machine Co.....	Detrick & Harvey.....	Joyce, Cridland & Co.....	50
American Supply Co.....	Detroit Saw Works, The.....	K	
Andress, Thomas J.....	Devlin & Co., Thos.....	Kaestner & Co., Chas.....	41
Anniston, Ala.....	Diamond Prospecting Co.....	Kanneberg Roofing Co.....	53
Arctic Ice Machine Mfg. Co.....	Dietz, Bernhard.....	Kilbourne & Jacobs Mfg. Co.....	60
Arnold, D. J. C.....	Dirige Engine & Machine Co.....	Knoxville Car Wheel Co.....	42
Ault & Wiborg.....	Disston, Henry, & Sons.....	Kroeschells & Bourgois.....	44
Austin, F. C., Mfg. Co.....	Dixon, Jos., Crucible Co.....	Kyle, R. B.....	32
B	Dolph, A. M., Co.....	L	
Babcock & Wilcox Co.....	Draper, Geo., & Sons.....	Ladd, Alfred W.....	51
Baldwin Locomotive Works.....	Druid Felt Co.....	Laidlaw & Duns, Co.....	58
Ball Engine Co.....	Dufur & Co.....	Lancaster Turbine Wheel Co.....	45
Baltimore Stor. & Light. Co.....	Du Quoin Iron Works.....	Landis, Ezra F.....	38
Barclay & Crockett.....	Dyott & Co.....	Lathe & Morse Tool Co.....	43
Barnes, W. F. & John, Co.....	E	Lehman-Evans Machine Co.....	4
Barry, W. B., Saw & Supply Co	Eagle Iron Works.....	Liberty, Va.....	17
Bates, Jas.....	Earle, T. K., Mfg. Co.....	Lidgerwood Mfg. Co.....	3
Bay Line	East Tennessee Land Co.....	Ligonier Clay Pigeon Co.....	51
Beach, H. L.....	Eastover & Co.....	Lincoln Iron Works.....	51
Beckett Foundry & Machine Co.	E. T., Va. & Ga. Ry.....	Link Belt Engineering Co.....	48
Belden Machine Co.....	Eclipse Wind Engine Co.....	Lockwood, Green & Co.....	31
Bentel & Margedant Co., The.....	Eddy, Chas. G.....	Lodge & Davis Mach. Tool Co.....	60
Berger Mfg. Co.....	Edmonds, Elias.....	Long & Allisatt Co.....	48
Bessemer, Ala.....	Egan Co., The.....	Loubridge, D. H.....	38
Bickford Drill Co.....	Electric Fare Box Co.....	Louisville Mch. & Elv. Wks....	53
Billings & Spencer Co.....	Electric Power Pub. Co.....	Lowe & Tucker.....	53
Birdsall Co.....	Empire Paint & Roofing Co.....	Lowell Steam Boiler Works.....	51
Blake Mfg. Co., The Geo. F.....	Empire Portable Forge Co.....	Ludlow Wire Co.....	54
Blakeslee Mfg. Co.....	Empire Wringer Co.....	Ludlow Valve Mfg. Co.....	49
Bliss, E. W., Co.....	Employers' Liability Assurance	M	
Bluffton, Ala.....	Corporation	Magnolia Anti-Friction Metal Co.	43
Boggs & Clarke.....	F	Makepeace, C. R. & Co.....	31
Bookwalter Casting Co.....	Fall River Spool & Bobbin Co.....	Males, A. S., & Co.....	51
"Boom".....	Fay, J. A., & Co.....	Marquette, John N.....	8
Boomer & Boschart Press Co., The.	Felthousen & Sherwood	Martin, Henry, Brick Mch. Mfg. Co	*
Box 110.....	Fisher, E. W.....	McGowan, The Jno. H. Co.....	58
Box 68	Fishkill Landing Machine Co.....	McLanahan & Stone.....	41
Boyle, David.....	Fletcher & Thomas.....	McNeil, G. C.....	36
Bradley & Co.....	Foley, J. T., & Co.....	McShane, H., & Co.....	54
Bradstreet Co.....	Fordham, Oliver & Co.....	Merchant & Co.....	44
Bray & Nickerson Auto. Gage	Foos Mfg. Co.....	Merchants & Farmers' Bank.....	27
Glass Co.....	Forsaith, S. C., Machine Co.....	Merry, C. H.....	9
Bridgeport Gun Imp. Co.....	Fort Payne, Ala.....	Meyers, Fred. J., Mfg. Co.....	52
Brown, Alex., & Sons.....	FortWorth Loan & Construct. Co.	Middendorf, Oliver & Co.....	27
Brush Electric Co.....	Foundry & Machine Department	Middleborough, Ky.....	24
Buckeye Engine Co.....	Harrisburg Car Mfg. Co.....	Milburn Gin & Machine Co.....	1
Bucyrus Fdry. & Mfg. Co.....	Frank Co.....	Miller & Bierce.....	56
Buffalo Forge Co.....	Fritz, Geo. J.....	Millers Falls Co.....	56
Buffalo Steam Pump Co.....	Fulton Iron & Engine Works.....	Milner & Kettig.....	53
Bullock, M. C., Mfg. Co.....	G	Mineral & Timber Land Co.....	50
Butterworth, H. W. & Sons	Gambrill, C. A., Mfg. Co.....	Minnigerode, Wm.....	51
Byrnes, M. A.....	Gandy Belting Co.....	Moon, J. L.....	32
C	Garin, E. E., & Co.....	Moore, F. H.....	40
Caldwell, H. W.....	Gates Iron Works.....	Moore & White Co., The.....	37
Cambridge Roofing Co.....	Gerlach, Peter, & Co.....	Morris, Isom & Co.....	34
Camden, S. C.....	Glamorgan Co., The.....	Morris Machine Works.....	45
Cameron, A. S., Steam Pump Wks.	Glen Cove Machine Co., (Lim.)	Morrison, Robert.....	5
Campbell & Zell Co.....	Globe Iron Roof. & Corrugat. Co.	Morrisonville, Tenn.....	21
Canning, Reginald & Co.....	Globe Machine Co.....	Morse, Williams & Co.....	1
Canton Steel Roofing Co.....	Globe Machine Works.....	Munroe, R. & Son.....	36
Carey, Thos. K., & Bros.....	Godfrey & Co., L.....	Munson Bros.....	*
Carlisle Mfg. Co.....	Gododd & Waters.....	Munson & Bro.....	33
Carter, Jno. S.....	Gordon, Strobel & Laureau (Lim.)	Murray, Jas., & Son.....	41
Case Mfg. Co.....	Graham, J. S., & Co.....	N	
Casey Boiler Mfg. Co.....	Goodhart, P. J. & Co.....	National Pulley Covering Co.....	47
Castle Engine Works.....	Globe & Wood Mfg. Co.....	Newellson Fdy. & Machine Co.	49
Catlett, Chas.....	Griffing Iron Co., A. A.....	New Bernie, N. C.....	34
Chalmers-Spence Co.....	H	New Decatur, Ala.....	38
Chambers Brothers Co.....	Haines, Jones & Cadbury Co.....	New Doty Mfg. Co.....	*
Chandler & Taylor.....	Hall, Amos H.....	New York Belting & Packing Co.	*
Charlottesville, Va.....	Haralson & Murray.....	New York Equipment Depo.	51
Chattanooga Fdry. & Pipe Wks.	Harrington, E., Son & Co.....	New York Hotel.....	55
Chattanooga Saw Works.....	Harrington & King Perforat. Co.	Niagara Stamping & Tool Co.	58
Chattanooga Paint Co.....	Harris, A. W., Oil Co.....	Niles Tool Works.....	43
Chattan'ga Wood Split Pulley Co.	Harris, Wm. A., Steam Eng. Co.	Nordyke & Marmon Co.....	1, 10
Chesapeake Belting Co.....	Harrison Safety Boiler Works.....	North American Metaling Co.	45
Chester Steel Castings Co.....	Hartford Steam Boiler Inspection	Northampton Emery Wheel Co.	52
Chicago Rawhide Mfg. Co.....	& Insurance Co.....	Norton Emery Wheel Co.....	52
Child, O. W., & Co.....	H	Noye, John T., Mfg. Co.....	*
C., H. & D. R. R.....	Hep, Chas.....	O	
Cincinnati Corrugating Co.....	Heisler Electric Light Co.....	Page Belting Co.....	46
Clark, Geo. P.....	Holland, Jackson.....	Palmer, Cunningham & Co. (Lim.)	*
Clark, Jeremiah.....	Holton Iron Roofing Co.....	Pancoast & Maule.....	33
Cleveland & Hardwick.....	Hopkins Mfg. Co.....	Pate, N. T., & Co.....	49
Cleveland City Forge & Iron Co.	Hopps Mfg. Co.....	Payne, B. W. & Sons.....	5
Cleveland Twist Drill Co.....	Houston, Levi.....	Pennsylvania Steel Co.	*
Coe & Wilkes.....	Hughes Steam Pump Co.	Perey & Co., W. Edwin.....	50
Colliau, Victor.....	Humphreys & Sayce.....	Pettee Machine Works.....	9
Cole, W. H.....	Hunting, E. B., & Co.....	Phenix Iron Foundry.....	56
Colonnade Hotel.....	Huntington, Ark.....	Phenix Iron Works.....	42
Commonwealth Construction Co.	Humphreys & Sayce.....	Phoenix Incandescent Lamp Co.	50
Consolidated Ice Machine Co.	Huntington, Ark.....	Phosphor-Bronze Smelt. Co. (Lim.)	43
Contractors' Plant Mfg. Co.	Hyndman, W. G., & Co.	Piedmont Air Line.....	35
Copeland & Bacon.....	I	Pierce, Butler & Pierce Mfg. Co.	31
Cordesman, Meyer & Co.....	J	Place, George.....	31
Covert Mfg. Co.....	Heap, Chas.....	Porter, H. C., & Co.....	42
Crompton Loom Works.....	Hesler Electric Light Co.....	Powell, A. C., & Son.....	*
Cronk Hanger Co.....	Hetherington & Nason.....	Powell, Wm. Co.....	44
Curtis Regulator Co.....	Hill Clutch Works.....	Pratt, J. H.....	47
D	Holland, Jackson.....	Pribble Machine Works Co.	51
E	Holmes, E. B., & Co.....	Priess Tool & Supply Co.	51
F	Holton Iron Roofing Co.....	Pulsometer Steam Pump Co.	58
G	Hopkes Mfg. Co.....	Q	
H	Houston, Levi.....	Queen & Crescent Route.....	54
I	Hughes Steam Pump Co.	R	
J	Humphreys & Sayce.....	"R".....	50
K	Hunting, E. B., & Co.....	Racine Hardware Mfg. Co.	5
L	Huntington, Ark.....	Rand Drill Co.....	36
M	Hyndman, W. G., & Co.	Rariq & Co., Alex. K.....	4
N	I	Record Printing House.....	*
O	J	Reliance Gauge Co.....	5
P	K	Richardson, W. A., & Co.	51
Q	L	Richmond City Mill Works.	48
R	M	Richmond Locomotive & Ma-	
S	N	chine Works.....	42
T	O	Richmond Machine Works.	33

The Patent Hale Pavement

Is the best and cheapest roadway for cities and towns now in use. It is more durable than granite or asphalt and costs much less.

Descriptive pamphlet sent on application. Correspondence solicited. Address

CHAS. CATLETT, Gen'l Manager,

STAUNTON, VA.,

CARLISLE MFG. CO.
Cars, Engines, Frogs
AND SWITCHES,
CARLISLE, PA.

ROCK DRILLS
AIR COMPRESSORS &
GENERAL MACHINERY FOR
MINING, TUNNELING,
QUARRY & RAILROAD WORK.
RAND DRILL Co. 23 PARK PLACE NEW YORK

New Doty Manufacturing Co.
JANESVILLE, WIS.

Manufacturers of Hand and Belt Power
Punching and Shearing Machinery,
BOILER MAKERS' ROLLS, &c.

FOR OAK LEATHER

BELTING
At Short Notice.
WRITE

THE AKRON BELTING CO.
AKRON, OHIO.

WEST POINT BOILER WORKS
Boilers with our Patent Eclipse Manholes and Plate Work made to Order.
R. MUNROE & SON
23rd & Smallman Sts., Pittsburgh, Pa.

FOR SALE.
WOOD-WORKING MACHINERY, full line, with latest improvements.
Write for circulars and price-list

BENTEL, MARGEDANT & CO., HAMILTON, OHIO.

EDWARD ALLEN,
Practical Lead Burner,

BALTIMORE, MD.

Sulphuric Acid Chambers constructed on the latest improved plan. Strict attention given to the Lead Work of Concentrating Apparatus.

P. O. BOX 329. ESTIMATES FOR THE ABOVE GIVEN.

To Manufacturers

Desiring a Staple Article on Royalty or Shop Right. For particulars of the "Landis Patent Steam and Hot Water Radiator" address EZRA F. LANDIS,

LANCASTER, PA.

McNEIL'S

Balanced Charging Barrow

FOR BLAST FURNACES, FOUNDRIES, ETC.



Send for circular No. 3.

G. C. McNEIL, Akron, Ohio.

Advertisements marked * are inserted every other week, and do not appear in this issue.

—DAVID BOYLE.—
521 W. Monroe Street, Chicago, Ill.

PATENTEE AND BUILDER OF THE

BOYLE ICE MACHINE AND REFRIGERATING APPARATUS.

The Most Simple, Reliable, Durable and Economical in Existence.

WHAT PEOPLE SAY.

"I consider it the greatest improvement that has ever been made in breweries."—FRED. PABST, President Ph. Best Brewing Co. "We are thoroughly satisfied with your machine, and we believe it is superior to any other in the market to-day."—HENRY G. KUHRT, President Atlanta City Brewing Co., Atlanta, Ga.

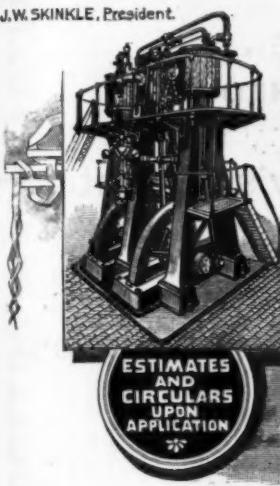
ESTIMATES FOR ICE OR REFRIGERATING MACHINES FURNISHED ON APPLICATION.

REFER TO OVER 140 MACHINES IN SUCCESSFUL OPERATION.

J.W. SKINKLE, President.

J. KOENIGSBERG, Secy.

LEO. RASSIEUR, Vice Pres't.



246

MACHINES
IN OPERATION

Making Ice—Refrigerating, Breweries, Packing Houses, Cold Storage Houses, Oil Refineries, Creameries, Hotels, &c.

BUY THE BEST AND SAVE MONEY.

All machines built by us are made to gauge and templet. Highest economy secured. Best results obtained. Machines in steady operation for more than ten years.

NO FAILURES.

ARCTIC ICE MACHINE

Manufacturing Co.

CLEVELAND, OHIO.

OFFICE AND WORKS,

4, 6, 8, 10 WEST ST.,
P. O. Box 92.OUR OWN SHOPS.
MACHINES CARRIED IN STOCK
AND ORDERS
PROMPTLY EXECUTED.

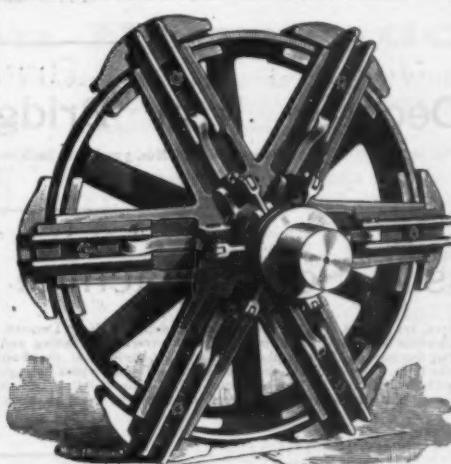
The Improved Arctic with Corliss Engine.

HILL
Clutch Works,
CLEVELAND, OHIO.

NEW YORK:
18 CORINTH STREET.
CHICAGO: MINNEAPOLIS:
28 S. Canal Street. 305 Kasota Bldg.
KANSAS CITY, MO.:
121 Union Avenue.

POWER PLANTS
Designed, Erected and Furnished.

Send for new Catalogue, Power Transmission Machinery.



COPYRIGHTED BY H. W. HILL, 1888.

Machine Molded Pulleys, Hangers, Boxes

COUPLINGS AND SHAFTING.

FIRE FRONTS, HEAVY MACHINE CASTINGS
OF ALL DESCRIPTIONS.

HOISTING AND TRANSMISSION SHEAVES.

Get Our Prices Before Purchasing.
Estimates given on Pulleys and Band Wheels to 10 feet in diameter. Send for Catalogue.

TODD PULLEY AND SHAFTING WORKS
EAST ST. LOUIS, ILL.



Advertise in the Manufacturers' Record.

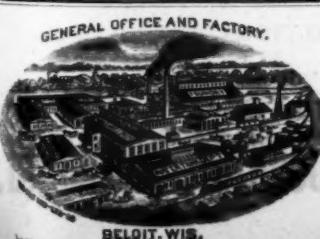
**ECLIPSE FRICTION CLUTCH PULLEYS
AND CUT-OFF COUPLINGS.**

SHATTUCK, WASHINGTON TERR., 530, 1889.
Eclipse Wind Engine Co., Beloit, Wis.
DEAR SIRS: The Clutch Pulley (diam. 106 in.; face 21 in.) works satisfactorily in every particular, and is a great convenience. We have two, and can stop either the main saws or the gang cutter, or both whenever desired, without stopping the engine. Yours respectfully,
Yesler Wood, Coal & Lumber Co.,
J. D. Lowman, Sec'y.

St. JOSEPH, Mo., June 21, 1889.
Eclipse Wind Engine Co., Beloit, Wis.
GENTLEMEN: The Clutch Pulley reached us all right; it works to a charm. If we had put it on last April, in place of one we had, we should now be ahead over \$400, which we have lost in time and breakages. Yours,
The Brick & Terra Cotta Mfg. Co.,
F. P. Hailey, Sec'y.

ECLIPSE WIND ENGINE CO., - Beloit, Wis.

Send for July, 1889 catalogue, and see where and by whom they are used.



Beloit, Wis.

NEW DECATUR,

* ALABAMA. *

The New Industrial City of the Great Tennessee Valley.

DESCRIPTION OF ENTERPRISES ALREADY ESTABLISHED:

1. The United States Rolling Stock Company's Plant.

For full description see back numbers of the "Record"—June 1, 8, 15, 22, 29.

2. The Louisville & Nashville Railroad Company's Shops.

For full description see back numbers of the "Record"—July 6, 13, 20, 27; August 3, 10.

3. The Southern Horse Nail Company.

4. The Decatur Iron Bridge & Construction Company.

For full description of Nos. 3 and 4 see back numbers of August 17, 24, 31 and September 7, 14, 21.

5. The Ivens & Son's Machine Company's Works and Foundry.

These works, covering about four acres, are located near the new passenger depot at New Decatur. with a frontage of about 500 feet on the Louisville & Nashville Railroad, and switch tracks for loading and unloading. They will shortly have a similar frontage on the Memphis & Charleston division of the East Tennessee, Virginia & Georgia Railroad, the line of which road is about to be changed so as to pass through New Decatur as well as Decatur proper, with freight yards in New Decatur. The main building, which is an imposing structure of brick and stone, with metal ventilating roof, contains the machine shop, foundry, blacksmith shop, boiler room and offices, the latter being in the centre and three stories high, with a cupola. The wood-working and pattern shop is in a separate building. The boiler works are as yet incomplete. The specialties manufactured by this company are engines of various descriptions, particularly the Ivens self-contained engine for ginning and baling cotton; also improved cotton baling presses and machinery for the irrigation and for the drainage of land.

6. The Decatur Electric-Light & Power Company.

The admirable plant lately constructed for this company by the Thomson-Houston Electric Company consists of a brick building, 60x80 feet, with metal roof. The machinery consists of three dynamos, boilers of 100 horse power, a 100 horse-power high speed Corliss engine, and a 60 horse-power Ball engine. The plant is running at present 50 arc and 600 incandescent lights, but has the capacity for doubling this quantity. The company has erected already eight miles of poles and wires. It is unquestionably the finest electric light plant in Alabama at this time.

7. The Decatur Water Company.

A splendid system of water works has been constructed for this company by Howland & Ellis, the well-known firm of engineers at Boston. They have laid already 22 miles of pipe. The water is obtained from the Tennessee river, the connection with the pump-house being, a 30-inch cast-iron conduit leading from the pump-well, under the bed of the river, to deep water in mid-channel. The buildings at the pumping station, near the river, consist of an expensive circular brick pump-house, 34 feet in diameter, and a brick boiler-house, 45x80 feet. The machinery is of 2,500,000 gallons capacity, consisting of duplex, condensing engines, with air boiler-feed and drain pumps, etc., and four 60 horse-power boilers. In addition to the direct pressure from the pumps, pressure is obtained also from an iron stand pipe 30 feet in diameter and 100 feet high, situated on an elevated site in one of the public parks, and supported on an ornamental foundation of masonry.

For Maps, Pamphlets and other Information about New Decatur, address

The Decatur Land, Improvement & Furnace Company, New Decatur, Alabama.

Ex-Mayor ABRAM S. HEWITT, of New York, says this section of Alabama "is the only place upon the North American Continent where it is possible to make iron in competition with the cheap iron of England."

BUSINESS POINTS

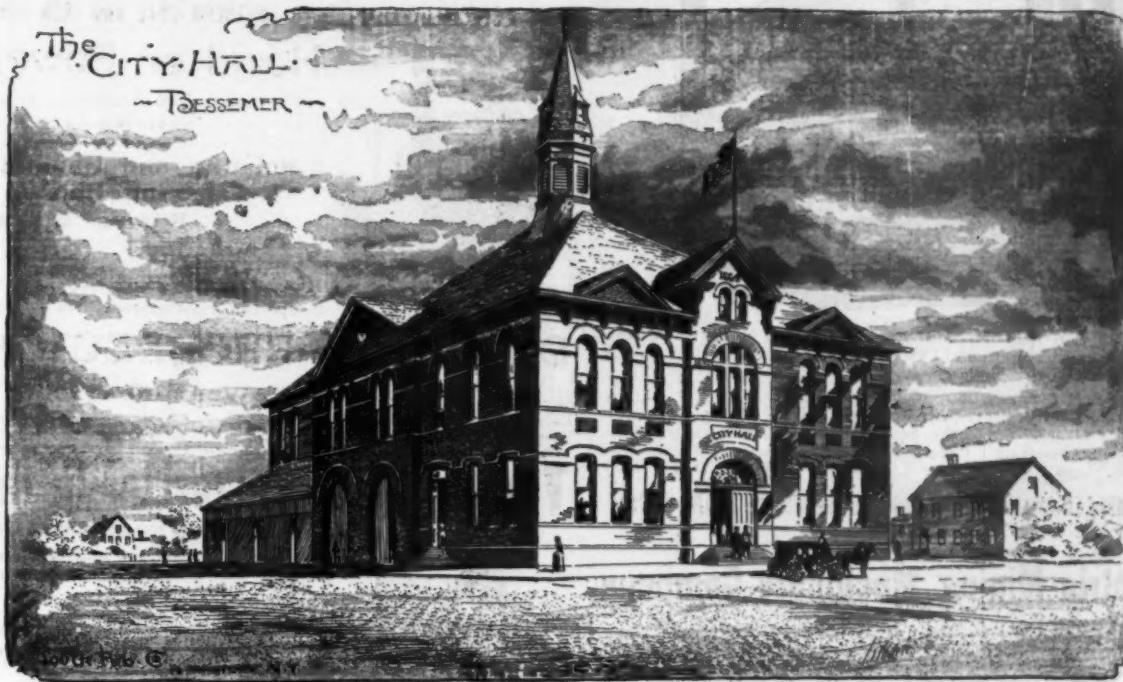
ABOUT

BESSEMER CITY, ALA.

WORTH CONSIDERING BY BUSINESS MEN.

COTTON MANUFACTURING.

With the cotton growing near the mill; at the present cost of spindles in position; spacious sites costing nothing; coal delivered to mills at \$1.35 per ton; modern steam machinery with its minimum consumption of fuel, Bessemer offers marked advantages.



Bessemer's Iron Foundations.

First.—The DeBardeleben Coal & Iron Company—Two furnaces in blast; two batteries of 170 coke ovens each—340. Extensive coal and iron mines, limestone rock, etc., in active operation. Furnaces situated within the city limits, occupying 160 acres of land—enough for multiplied extensions. Average output 225 tons daily.

Second.—The Bessemer Steel & Iron Company Two furnaces go in blast December, 1889; two batteries of 200 coke ovens each. Extensive coal and iron mines, limestone rock, etc., in active operation. Furnaces situated within the city limits, occupying 100 acres of land—enough for multiplied extensions. Average output 225 tons daily.

Third.—The Little Belle Iron Company—To go in blast December, 1889. One charcoal furnace, situated within the city limits, occupying 50 acres of land, enough for multiplied extensions. Average output 60 tons daily.

Fourth.—The Bessemer Rolling Mills—Situated within the city limits, occupying 18 acres of land. When running full works 700 hands. One hundred tons possible daily output.

Fifth.—In addition to the coal and iron mines above referred to, in connection with the five furnaces, these proprietors own the MAGNETIC ORE LAND COMPANY. The total coal, iron and limestone lands owned by these corporations amount to over

200,000 ACRES.

The EARLIEST SELECTED and choicest lands in Alabama, all directly tributary to the City of Bessemer, representing, with furnaces, rolling mills, etc., an aggregate of \$8,000,000, not including other lines of business.

Iron Manufacturers in Bessemer will have a direct advantage of \$2.50 to \$3 per ton on the cost of Pig Iron, compared with Pennsylvania Prices.

TRANSPORTATION EVERYWHERE UNEXCELLED.

The Queen & Crescent Line—Cincinnati to New Orleans.

The Louisville & Nashville Lines.

The Georgia Pacific and Danville Lines.

The Kansas City, Memphis & Birmingham Line.

The Birmingham & Bessemer Railroad runs trains every hour to Birmingham.

The Bessemer & Huntsville is completed as far as Cheluntepec.

The Bessemer & Tuscaloosa is completed to Woodstock, a distance of thirty miles, lacking only eighteen miles of reaching Tuscaloosa.

The Bessemer & Selma has been surveyed and grading will soon commence.

The Mobile & Bessemer, an extension of the East Tennessee, Virginia & Georgia, is in process of rapid construction.

The Sheffield & Bessemer is projected to Bessemer. It is now built as far as Jasper, forty miles northwest.

The Birmingham, Powderly & Bessemer Street Railway, Bessemer to Birmingham, will be running by November 1st, half the line being now graded.

WOOD-WORKING INDUSTRIES—The primeval forests of Alabama, tributary to Bessemer, offer manifold attractions to Wood-Working Manufacturers.

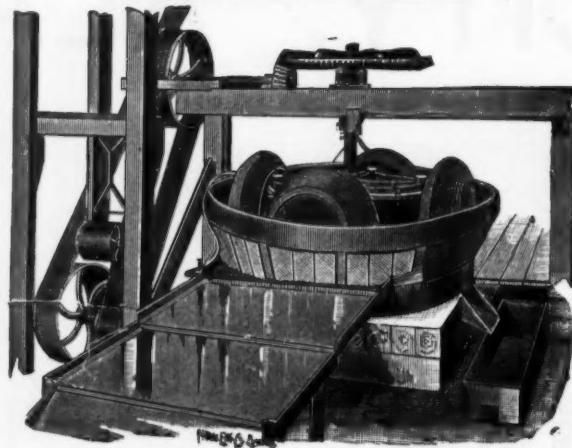
CORRESPONDENCE SOLICITED. For particular information as to price of lots, manufacturing sites and inducements to establishing plants in this unrivaled locality, address

H. M. McNUTT, Secretary.


President

* WISWELL *

Ore Pulverizer and Amalgamator COMBINED.



The following testimonial from Mr. Marsden, of the firm of Farrel & Marsden, manufacturers of Stone Breakers and Ore Crushers, Ansonia, Conn., speaks volumes for the Wiswell Mill:

Wiswell Electric Mining Machinery Co.

GENTLEMEN—After carefully inspecting your mill and seeing it in operation, I do not hesitate to say that it is one of the best, if not the best pulverizer and most complete gold-saving machine I have ever seen. Please accept congratulations for your success.

S. L. MARSDEN.

WE FURNISH A COMPLETE MILL FOR \$2,500, DELIVERED ON BOARD CARS.

FOR FURTHER INFORMATION ADDRESS

Wiswell Electric Mining Machinery Company,

4 POSTOFFICE SQUARE,

A. A. REEVE, Treasurer.

BOSTON, MASS.

BUY THE BEST.

Bullock's Diamond Prospecting Core Drills,

For Surface or Underground Prospecting.

The Only Drills that will give an Accurate Record of every Strata Penetrated.

ALL DRILLS SOLD WITHOUT RESTRICTIONS.

Lane's Band Friction Hoisting Machinery

Drums from 2 Feet to 25 Feet in Diameter.

Improved Corliss Engines,

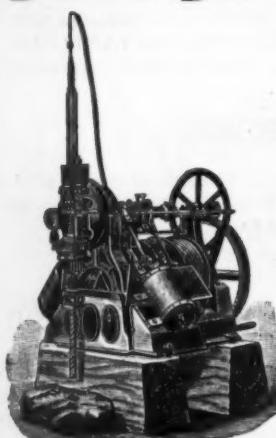
Slide Valve and Straight Line Engines,
Eclipse Rock Drills, Air Compressors,
Channeling and Quarrying Machines.

M. C. BULLOCK MFG. CO.

No. 138 Jackson Street,

Write for what you want. CHICAGO.

Cable Address: BULLOCK, CHICAGO.



Diamond Prospecting Drill.

THE Wardwell Stone Channeling
AND
Quarrying Machine.

WILL pay for itself in a short time in reduced cost of getting out Stone. Has no equal for efficiency and economy of operation. Pronounced by those who have used it the best machine for the purpose in the world. Send for illustrated catalogue, with full descriptions and letters from parties now using the machines.

Steam Stone Cutter Co.

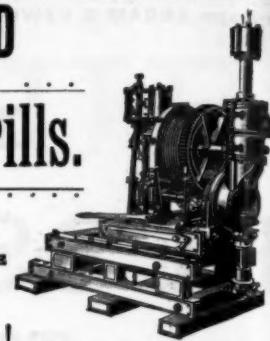
RUTLAND, V.R.MONT.



SULLIVAN DIAMOND

Prospecting Core Drills.

THE MOST RELIABLE AND
SATISFACTORY MADE FOR PROSPECTING FROM THE
SURFACE OR UNDER GROUND.

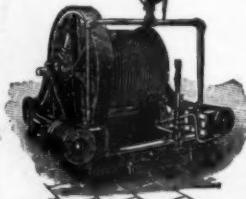


RAPID! ACCURATE! ECONOMICAL!

"N" Drill—Capacity 2,000 feet.

SPECIALLY ADAPTED TO SOUTHERN COAL AND IRON FORMATIONS.

Hand or Power Drills,



Capacities 300 to 4,000 feet. All sizes in stock.
SEND FOR CATALOGUE.

**Holisting and Hauling Engines,
Exploring Hoists, Steam
Pumps. Boilers.**

Underground Haulage by Wire Rope a specialty. Estimates furnished on complete plants. Contractors for prospecting mineral lands with the Diamond Core Drill.

DIAMOND PROSPECTING CO.

74 and 76 W. Lake Street,

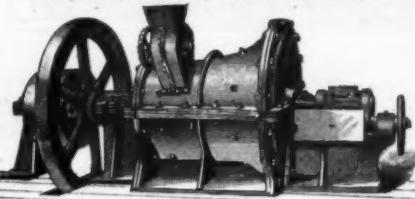
Eastern Office, 18 Broadway, New York.

Cable Address, "DIAMOND, CHICAGO."

CHICAGO, ILL.

The Greatest Pulverizer in the World.

Pulverizes from 10 to 160 mesh fineness, and has a capacity of 1 to 3 tons per hour.



Better than burr mills for pulverizing Phosphates, Plumbago, Cement, Foundry Facings, Iron for Paints, Gold and Silver Ores, Flint Rock for Glass, Coke for Carbons, Paints, Asphalt Materials, Feldspar, Red Ochre, Sandstone, Limestone and Calcined Lime. Correspondence solicited. Send for samples of different products.

F. H. MOORE,
Manufacturer,

48 City Hall Bldg., Cleveland, O.

Gates Rock and Ore Breaker

CAPACITY IN TONS OF 2,000 POUNDS.

Size 0—2 to 4 tons per hour	Size 4—15 to 30 tons per hour
1—4 to 8 "	5—25 to 40 "
2—6 to 12 "	6—30 to 60 "
3—10 to 20 "	7—40 to 75 "
	8—100 to 150 "

Passing 2 1/2 in. ring, according to character and hardness of material.

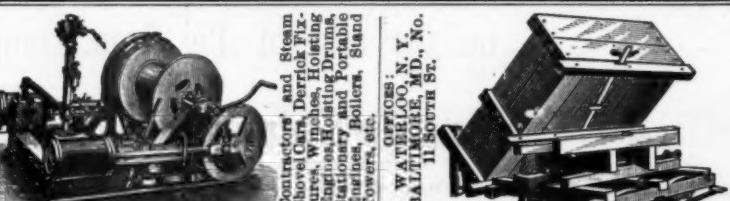
Great SAVING in POWER. Adjustable to any Degree of Fineness.

The principle involved in this Breaker acknowledged to be the greatest success ever introduced into Stone Breaking Machinery.

Send for Catalogue, containing over 500 references of Contractors, Miners, Railway Companies, Cement Makers, etc.

GATES IRON WORKS,

50 S. CLINTON ST., CHICAGO, U.S.A.
12 Cortlandt St., New York, U.S.A.
73a Queen Victoria St., E.C. London, Eng.



Contractors and Steam Fixtures, Shovel Cars, Derrick Fixtures, Winches, Hoisting Drums, Stationary and Portable Engines, Boilers, Stand Towers, etc.

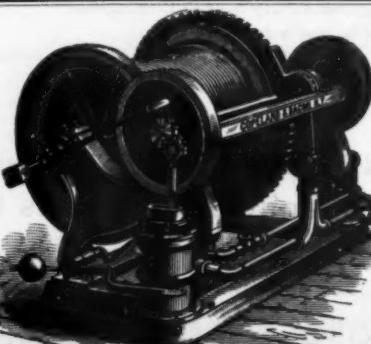
OFFICES: WATERLOO, N.Y., M.D., No. 11 South St.

BALTIMORE, M.D., No.

11 South St.

Manufactured by RYAN & McDONALD,
Shops and Warehouses, WATERLOO, N.Y.
Send for Illustrated Catalogue and Prices.

All correspondence should be addressed to Waterloo office.



BACON WINDING ENGINES,
FURNACE HOISTS,
MINE HOISTS.

(With or Without Boilers.)

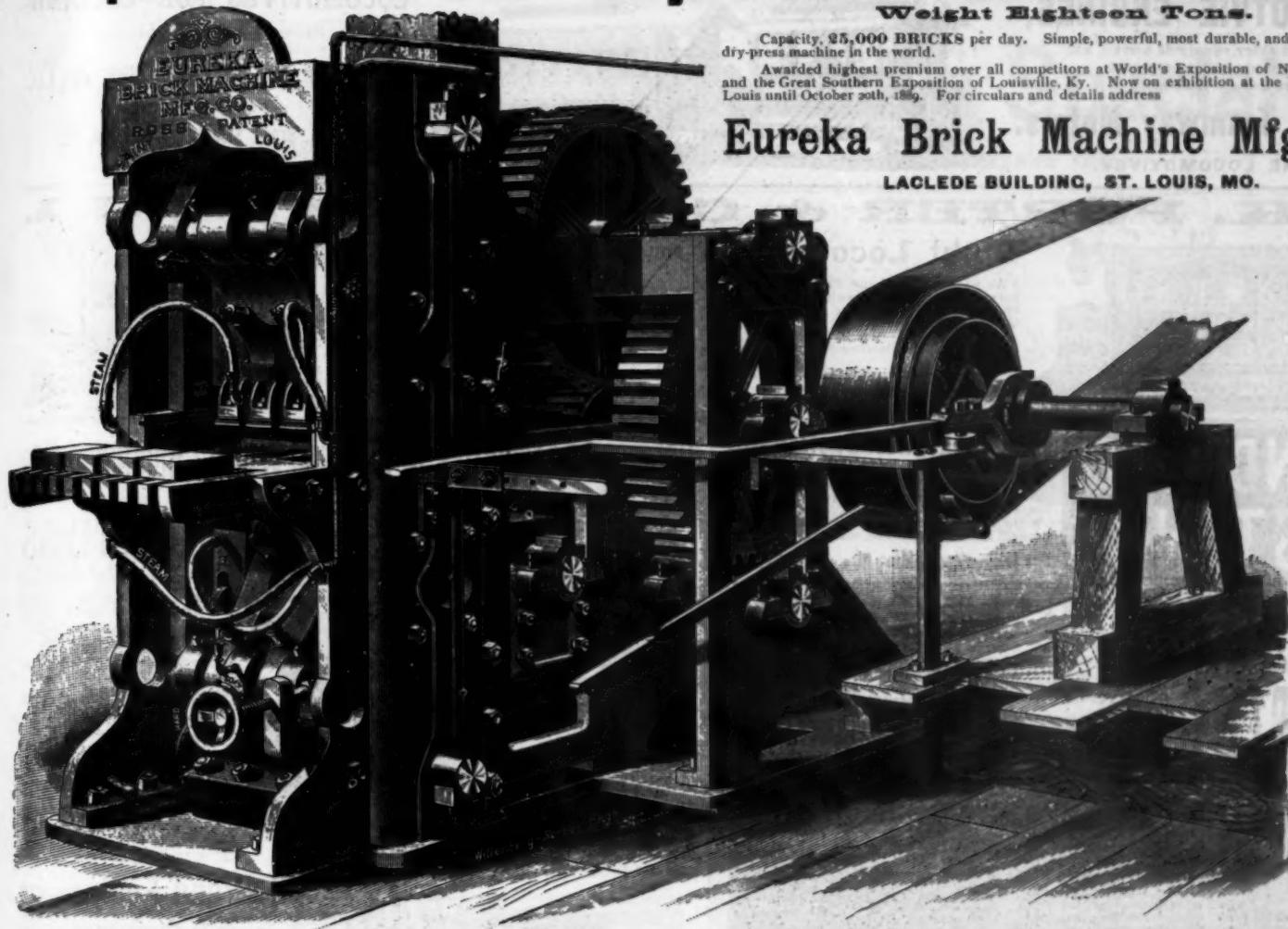
"MINING PLANTS," Concentrating Works and Dredging Machinery Furnished Complete.

COPELAND & BACON

85 Liberty Street, New York.
585 Arch Street, PHILADELPHIA.

REFERENCES:—Croton Magnetic Iron Mines, Brewster's, N. Y. Crown Point Iron Co., Crown Point, N. Y. Belvidere Iron Co., 52 Broadway, New York. Sea Island Chemical Co., Beaufort, S. C.

Improved Eureka Dry Press Brick Machine.



Weight Eighteen Tons.

Capacity, 25,000 BRICKS per day. Simple, powerful, most durable, and superior to any dry-press machine in the world.

Awarded highest premium over all competitors at World's Exposition of New Orleans, La., and the Great Southern Exposition of Louisville, Ky. Now on exhibition at the Exposition in St. Louis until October 20th, 1899. For circulars and details address

Eureka Brick Machine Mfg. Co.

LACLEDE BUILDING, ST. LOUIS, MO.

BRICK * MACHINERY.



THE NEW

QUAKER

is the best and most reasonable in price of any first-class Brick Machine made. Send for illustrated catalogue, giving full particulars and prices before purchasing.

Both Horse and Steam Machines.

PUG MILLS, MOLD SANDING MACHINES, MOLDS, BARROWS, AND ALL BRICKMAKERS' SUPPLIES.

Fletcher & Thomas, Indianapolis, Ind

Chambers' Brick Machinery



15,000, 25,000, 50,000 per day Capacity.

GUARANTEED AND FURNISHED ON THIRTY DAYS' TRIAL.

CHAMBERS BROS. CO., Philadelphia, Pa.

McLANAHAN & STONE, Engineers and Manufacturers,
GAYSPORT FOUNDRY, HOLLIDAYBURG, PA.

Blast Furnace, Rolling Mill and Heavy Castings and Machinery for all purposes.

ORE JIGS, IMPROVED ORE WASHERS,
with Revolving Screens and Picking Tables.

Elevators and Conveyors, Etc.
Complete Plants for washing HEMATITE ORES at Least Cost.

THE BREWIS BRICK PRESS

Patented August 18, 1885, January 8, 1890.

FOR MAKING PERFECT BRICK—

—FROM DRY OR SEMI-DRY CLAYS.

Machines Warranted and sold to responsible parties on thirty days' trial. Weight of two-mould machine, 14,000 pounds. Capacity of two-mould machine, 8,000 to 16,000 perfect brick in ten hours. Send for circulars and prices to sole licensed builders.

CHAS. KAESTNER & CO.

Machinists, Founders, Engines, Shafting, Pulleys, &c.

808-811 S. CANAL STREET, CHICAGO, ILL.

WE TEST ALL CLAYS SENT PREPAID FREE.



Send for Illustrated Catalogue.

Meet the Manufacturers' Record.

DAVIDS' PATENT DISINTEGRATING MILL

For Bones, Phosphates, Tankage, Ores, Clay, Fish Scrap, Salt Cake, &c.
Fertilizer Machinery, Mixers' Rolls, Breakers, &c., &c. Marine
Railways, Clay Temperers. Send for Catalogue.

JAMES MURRAY & SON, 102 to 108 York Street, Baltimore, Md.

Established 1831.

BALDWIN LOCOMOTIVE WORKS.

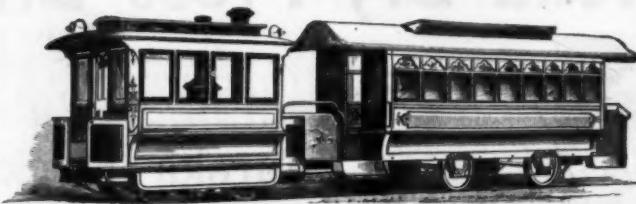
Annual Capacity 800.

LOCOMOTIVE ENGINES,

Adapted to every variety of service, and
built accurately to standard
gauges and templates.

Steam Tramway Motors.

MINE LOCOMOTIVES.

**LOCOMOTIVES FOR LOGGING**

Railroads and Sugar Estates.

Burnham, Parry, Williams & Co.
PROPRIETORS,

500 N. Broad Street, Philadelphia, Pa.

In writing, please refer to Manufacturers' Record.

H. K. PORTER & CO., PITTSBURGH, PA., U. S. A.**Light Locomotives and Noiseless Motors**

All gauges of track for Passenger and Freight Service, Logging Railroads, Mines, Blast Furnaces, Steel Works, Coke Ovens, Contractors' Work and Plantations.

Photographs and illustrated catalogue on application. In writing mention MANUFACTURERS' RECORD.

Memo.—All work STEEL FITTED and built to duplicate system. Extra parts kept in stock. We keep on hand, ready for immediate shipment, LOCOMOTIVES AND MOTORS OF SEVERAL SIZES, WIDE OR NARROW GAUGE.

**SOUND STEEL CASTINGS****The Bookwalter Casting Co.**

Are now fully prepared to furnish STEEL CASTINGS on short notice, of any size and pattern, made under the *Bookwalter & Robert Patents*. These castings are guaranteed to be sound and true to the pattern and of unequalled tensile strength and ductility. Address

The Bookwalter Casting Co., Springfield, O.

From 1-4 to 15,000 lbs. Weight.

True to pattern, sound, solid, free from blow-holes, and of unequalled strength. Stronger and more durable than iron forgings in any position or for any service whatever. 40,000 CRANK SHAFTS and 30,000 GEAR WHEELS of this steel now running prove this CRANK SHAFTS and GEARING specialties. STEEL CASTINGS of every description. Send for circulars and prices to

CHESTER STEEL CASTINGS CO.

Office, 407 Library St., Philadelphia. Works, Chester, Pa.

PHOENIX IRONWORKS

W. THOMPSON

MANUFACTURERS OF

CRANES

ROLLING MILLS WORKS

FORGE WORKS, MACHINERY, ETC.

CINCINNATI, OHIO

CINCINNATI, OHIO

CINCINNATI, OHIO

CINCINNATI, OHIO

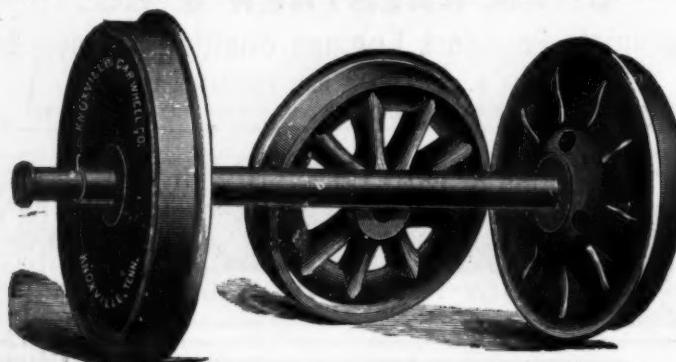
Knoxville Car Wheel Co.

KNOXVILLE, TENN.

Manufacturers of All Kinds of

CHILLED WHEELS

For Railroads, Street Railroad, Ore and Coal Mines, and Lumbermen.



Steam Hammers,
Steam Hoists,
Foundry Cupolas,
Derricks, Crabs,
Horse Powers,
Shieves, Drill Heads,
Gearing, Pulleys,
Bolts of all sizes.
Locomotives and Engines
Repaired and Indicated.

CORRESPONDENCE SOLICITED.

Steel and Iron Boilers,
Guild's Automatic
Boiler Cleaner,
Car and Locomotive Castings,
Soft Iron Castings of all kinds.
Heavy Castings a specialty
Wheels mounted on Axles if
desired, with Oil Boxes
and Bolts.

MENTION THIS PAPER.

Richmond Locomotive & Machine Works, Richmond, Va.

ESTABLISHED IN 1866.

Builders of

LOCOMOTIVESfor every variety of service
to Standard Designs or to meet
views of purchasers.**MOTORS**for Street Railways, Tram Roads
and Mines.

Stationary Engines

for heavy duty.

BOILERS,Standard or Special.
Send for Catalogues, Specifications
and Estimates.**DYOTT & CO.**52 WALL STREET,
NEW YORK**Railroad Equipment**

AND SUPPLIES.

Locomotives, Cars, Rails,

FASTENINGS, SPIKES, ETC.

Frogs, Crossings, Switches, &c.

Securities negotiated. Contracts taken.

JOHN STEPHENSON COMPANY NEW YORKTRAMWAY CARS OF EVERY DESCRIPTION
LIGHT ELEGANT DURABLE

B. F. DAVIS, Pres.

J. T. ANDERSON, Sec'y and Treas.
(Late with Tredegar Co.)R. W. JEFFERY, Supt.
(Late with Tredegar Co.)**The Richmond Standard Spike Co., Richmond, Va.**

Manufacturers of Dock, Ship and Railroad Spikes.

STEEL RAILS**PENNSYLVANIA**

Standard Sections

Light Sections

Street Rails

Fish Plates,
Frogs, Switches**STEPHEN W. BALDWIN**
SALES AGENT**STEEL COMPANY**

50 to 80 lbs. per yard

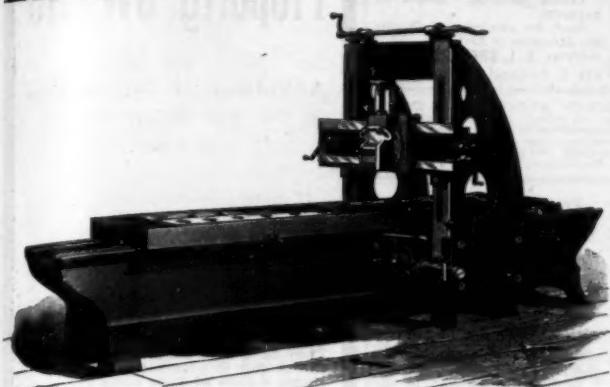
16 " 45 " "

30 " 88 " "

Bolts & Nuts,
and Crossings.**NO. 2 WALL STREET**
NEW YORK N.Y.

16 lbs. Full Size.

NILES TOOL WORKS, HAMILTON, O.



Planers a Specialty.

NEW PATTERNS 1880.

Strictly First-Class.

Moderate Prices.

Perfection of Workmanship.

Positive Feed.

Quick Return.

Extra Heavy.

Large Bearings.

The Smoothest Running Planers.

NEW YORK--98 LIBERTY STREET.

PHILADELPHIA--705 ARCH STREET.

PITTSBURGH--PENN BUILDING.

CHICAGO--PHENIX BUILDING.

MAGNOLIA METAL.



ENDORSED BY

United States & German Governments.

Best Anti-Friction Metal

FOR

Steamship, Car and All Machinery Bearings.

MAGNOLIA ANTI-FRICTION METAL CO.

Owners and Sole Manufacturers,

LONDON OFFICE:
75 Queen Victoria Street.

74 Cortlandt St., New York.



PHOSPHOR-BRONZE
INGOTS, CASTINGS & MANUFACTURES.
THE PHOSPHOR BRONZE SMELTING CO. LIMITED
512 ARCH ST. PHILADELPHIA PA U.S.A.
ORIGINAL MANUFACTURERS OF PHOSPHOR-BRONZE IN THE UNITED STATES AND OWNERS OF THE U.S. PATENTS.

Build & Repair Your Machinery



Established 1845.
T. K. Carey & Bros.
SOUTHERN AGTS.,
Baltimore, Md.

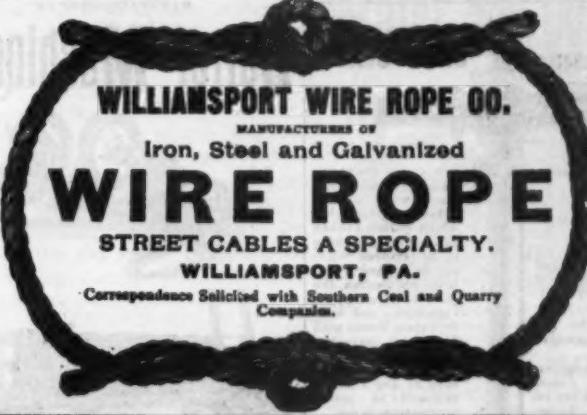
BY USING
Engine Lathes, Planers,
Chucking Lathes, Hand Lathes,
AND
MACHINE TOOLS GENERALLY
MANUFACTURED BY
LATHE & MORSE TOOL CO.
Worcester, Mass., U. S. A.

THE BILLINGS
HARTFORD
MANUFACTURERS OF
DIES MADE IN 5
THREADS FROM
TO 2 INCHES &
U. S. STANDARD AND
DROP FORGED

& SPENCER CO.
CONN.
SCREW PLATES AND
SIZES CUTTING
OF AN INCH
THREAD ALSO
WHITWORTH THREAD
OF BAR STEEL

Chattanooga Paint Company. CHATTANOOGA,
TENN.
Manufacturers of the
BEST OXIDE OF IRON PAINT MADE IN THE UNITED STATES.

Over 18,000 tons made since 1880. 3,000 tons made in 1888. Over 500 certificates regarding its qualities. Either dry or mixed ready for use.
SEND FOR PRICES DELIVERED AT POINT OF DESTINATION



WILLIAMSPORT WIRE ROPE CO.

MANUFACTURERS OF

Iron, Steel and Galvanized

WIRE ROPE

STREET CABLES A SPECIALTY.

WILLIAMSPORT, PA.

Correspondence solicited with Southern Coal and Quarry Companies.

HOOPES & TOWNSEND,

PHILADELPHIA,

—AND—

THE HOOPES & TOWNSEND CO.

WILMINGTON, DEL.

MANUFACTURERS

Machine and Car Bolts.

Keystone Boiler Rivets made in Solid Dies.

Cold Punched, Chamfered, Trimmed and Drilled, Square and HEXAGON NUTS.

Bridge Rivets,

Split and

Single Keys.

WASHERS,

Tank and Coopers' RIVETS.

ESTABLISHED 1832 ON PRESENT PREMISES.

The Best

—IS—

ALWAYS

—THE—

Cheapest.

Therefore

BUY OUR

COLOPHINE

—OR—

Perfect Oils



The above are our specialties in MACHINERY OILS, and are the best oils for the price manufactured. We can give you anything in the OIL LINE, any grade, at the very lowest prices. Correspondence solicited.

WM. C. ROBINSON & SON,
MANUFACTURERS AND DEALERS IN OILS,
217 South Street Baltimore, Md.

Stuebner & Woods

MANUFACTURERS OF

Self-Dumping Steel & Iron
Hoisting Tubs,Side and Bottom Dumping
Cars for Coal Elevators,
Iron Wheelbarrows, Hoisting
Blocks, Bottom-dumping Tubs
for Coaling Locomotives, &c.LONG ISLAND CITY, N. Y.
Send for circular and price-list.**EAGLE IRON WORKS**DETROIT, MICH.
MANUFACTURERS OFVERTICAL AND HORIZONTAL
ENGINES.BOILERS
OF ANY DESCRIPTION.
CASTINGS & FITTINGS
OF ALL KINDS.Satisfaction guaranteed. Correspondence solicited.
C. J. O'HARA, General Manager.THE
Bray & NickersonAUTOMATIC
GAGE GLASS

Positive in Action

Simple in Construction.

Easily Attached and Adjusted.

Thoroughly Tested.

Guaranteed in Every Particular.

These glasses are fitted with Patent Automatic Valves set within the boiler, which will be INVARIA-

Agents Wanted.

Bray & Nickerson Automatic Gage Glass Co.
34 Oliver Street, Boston.**EMERY WHEEL TOOL GRINDER.**

55 Styles and Sizes of Emery Wheel Grinders.

Glue & Emery Wheel Co.
Springfield,
Mass.

Write for Illustrated Circular F.

Will ship strictly on their merits for 30 days' trial.

Pat. Sept. 1883.

The Grinding is done so rapidly that they will pay for themselves every year over grindstones as a gift.

ROLLER and Detachable Chain Belting,

Detachable in Every Link.

FOR IMPROVED

ELEVATORS,

CONVEYERS,

AND

Driving Belts

FOR HANDLING

Coal, Ores, Grain,

CLAY, BRICK, &c.

ADDRESS

The Jeffrey Mfg. Co.

121 W. STATE ST.

Columbus, O.

Also manufacturers of the Legg Coal Mining Machines and Rotary Power Coal Drill. Send for Illustrated Catalogue.

WHICH? BUTTER OR CHEESE.

If either, or both, send for
J. S. CARTER'S Illustrated
CARTER'S CREAM CHEESE,
Information of latest and best method
and appliances for making Cheese
or Butter, from the largest factory
to the smallest dairy.
Carter's Cream Churning
System of Butter Making is a success.
JOHN S. CARTER, Syracuse, N. Y.

R. M. JOHNSON,
WHEATLAND, VA.Manufacturers' Agent and Dealer in Corliss,
Automatic Cut-off and Plain Slide Valve**Steam Engines and Boilers.**Saw Mills, Machinists' Tools Wood-working
Machines, Mining, Brick, Ice, Grist Mill, Cann-
ing and Dairy Machinery a Specialty.
Complete Outfits Supplied at Lowest Prices.
Correspondence solicited.**E. & B. HOLMES,**BUFFALO, NEW YORK,
MANUFACTURERS OF**Barrel Machinery.**Saw Mills, Machinists' Tools Wood-working
Machines, Mining, Brick, Ice, Grist Mill, Cann-
ing and Dairy Machinery a Specialty.
Complete Outfits Supplied at Lowest Prices.
Correspondence solicited.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

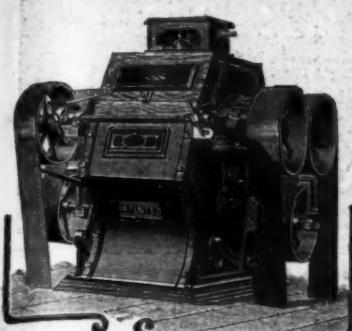
Agents Sole Agents.

E. & B. HOLMES, Sole Agents.

Agents Sole Agents.

E. & B. HOLMES,

Read What a New York Miller Says of the Case Company.



OFFICE OF PETER SNYDER,
DEALER IN FLOUR, FEED AND LUMBER,

MANLIUS STATION, N. Y., October 28, 1889.

The Case Manufacturing Company, Columbus, Ohio:

GENTLEMEN: After running my mill over two months, I feel it my duty and in justice to you to state that I am more than pleased with the mill you built for me. It started like a clock "from the word go". My flour is discounting the fanciest brands of flour in the market. My clean-up is equal to any mill in the State. I will say that the Case Rolls and Flour Dressers cannot be beaten in the world for light running and ease of access to all their parts. I would advise any miller building a new mill or remodeling an old one to place their contract with the Case Company.

Thanking you for the prompt and efficient manner in which you furnished my machinery in so short a time, after so great a loss and damage by fire burning your works, and with the best of wishes I remain,

Yours respectfully,

PETER SNYDER.

For full particulars regarding the best FLOUR OR CORN MILL MACHINERY, address



THE CASE MANUFACTURING CO., Columbus, Ohio.

TRADE NOTES.

THE National Pulley Covering Co., of Baltimore, have recently received an order for their covering for a pulley 16 feet in diameter running a 26-inch belt. Their October business came from 23 States, a large amount of this business coming from concerns who first made trial of their goods, being skeptical as to the remarkable results obtained from the use of this "covering," their continued orders showing their faith in it.

A SATISFACTORY PAINT.—The Richmond Iron Paint Co. invite trial of their weather, water and fire-proof metallic paint. It is claimed to never crack, blister or peel, is equally well adapted for tin, zinc, copper, iron, shingle or board roofs, and is particularly suited for damp or imperfect walls. The company are also agents for the Vulcan and Solteria paints, which are well and favorably known to the trade. They need agents for their own line of goods for Maryland and Southern territory and invite correspondence. Address N. T. Pate & Co., 1007 E. Cary street, Richmond, Va.

RAILWAY, MINING AND MILL SUPPLIES. The Southern Equipment Co., Chattanooga, Tenn., though but recently organized, have secured already a gratifying share of patronage and report prospects good. The company make a specialty of railway, mining and mill supplies, and furnish all kinds of labor-saving appliances. Office 5 and 8 Montague Block, Chattanooga, Tenn. The company has placed several good orders already. Among them is a Shay locomotive and two diamond truck logging cars to Perkins Manufacturing Co., of Augusta, Ga.; a Shay locomotive and four cars to Stone & Grier, Beechill, Ga.; a Shay locomotive, one car and corrugated iron roofing for planing mill to John A. Mills, Keyser, N. C.; a Shay locomotive, 3 flat cars and 4 miles steel rail to Sistrunk & Jordan, Tallasse, Ala.

INVESTORS would do well to give careful attention to the card of Messrs. Munson & Bro., of Denison, Texas, which appears in this issue, tersely setting forth the merits of that thriving young city of the Southwest as a field for the profitable outlay of capital. One must bear in mind that Texas is an empire in itself so far as area goes, and when one reflects that a vast population will crowd its cities or reap a living from its broad prairies in the near future, the lesson for investors becomes plain. It is simply invest at once, and reap the full profits of ventures. Coke, coal, magnetic and hematite iron ore lie near to the city's doors, and vast stores of timber are within ready reach. The city should become the Pittsburgh of the Southwest, for Texas alone in the near future will afford a home market which it will require an army of workers to supply.

Solid and Sensible.

One of the most striking, because one of the most liberally projected, of the great enterprises now on foot in the South is the scheme of the East Tennessee Land Co., the advertisement of whose plans appears in this issue of the MANUFACTURERS' RECORD. The company, as already stated, is under the management of General Clinton B. Fisk, president; A. W. Wagnalls, treasurer; A. A. Hopkins, secretary, all of New York, and Frederick Gates, of Tennessee, manager. They have a capital stock of \$3,000,000, covering 300,000 acres of land in six counties of East Tennessee, mostly contiguous. This vast tract is estimated to contain 250,000 acres of land rich in coal for domestic and coking purposes; 40,000,000 tons of the best grade of Bessemer steel ore and 600,000,000 feet of white woods, oak, pine, chestnut and other timber, with three iron mines upon it in successful operation.

The purchase was not made at hazard, but was the result of careful prospecting and actual survey, and gives the company one of the finest properties in the country. The main purpose of the company is the development of the tract by the establishment of "Harriman," an industrial center, and "Deermont," an upland town on the great Cumberland plateau, 2,000 feet above the level of the sea. Two great trunk lines already pass over the site of Harriman, and three other railroads are rapidly centering toward it, while more are projected radiating from it, thus rendering the town the likely focus of many hundred miles of naturally rich territory. Harriman has all the requisites for fulfilling the expectations of its founders, who wish to make it a progressive industrial center. The climatic conditions, backed by the company's abundant means, must make Deermont a popular health resort. The broad plans and liberal policy of the company cannot but attract attention wherever they are presented.

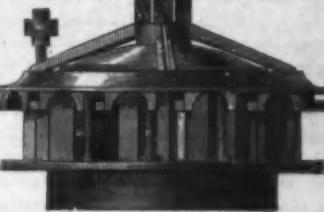
Half a million dollars' worth of the company's stock as yet unsubscribed is offered for sale at par, in shares of \$50 each, twenty per cent. down and the balance in monthly payments of ten per cent. This stock is non-assessable. It is based on solid value and will be received by the company at par in payment for farm lands or city or town lots; with such a discount as will give until July 1, 1890, every \$100 of stock the purchasing power of \$133.33 cash. Certainly nothing more liberal could be expected, and the solidity and repute of the management are in themselves a guarantee of the meritorious character of the enterprise, the stock of which bids fair to largely appreciate in the near future. All communications should be addressed to A. A. Hopkins, secretary, 96 Broadway, New York, but drafts, checks, etc., should be made payable to A. W. Wagnalls, treasurer. An illustrated prospectus containing full particulars will be mailed upon application.

MEDALS FOR EXCELLENCE.—At the Piedmont Exposition held recently at Atlanta, Ga., Messrs. E. & B. Holmes, of Buffalo, N. Y., received six medals on exhibits of wood-working machinery turned out from their factory.

COTTON AND WOOLEN MILL AT AUCTION. The Terrell Cotton & Woolen Mill, located in Terrell, Texas, as advertised in this issue, will be sold at auction on January 22 next. The mill is a commodious structure containing machinery needed for 2,200 spindles, and has 36 looms in position. Address Terrell Cotton & Woolen Manufacturing Co., Terrell, Texas.

A READY-MADE BUSINESS AT A BARGAIN.—A completely equipped planing mill, now in successful operation, located in Chattanooga, Tenn., is offered for sale. The mill, machinery, stock in trade and good-will will be sold on easy terms, while the real estate will be leased for a term of years. Address R. P. O. box 573, Chattanooga, Tenn. See notice in this issue.

SUCCESS Water Wheel.



This Wheel is strong and durable. Excelled all other wheels in the great trial tests. Is in use all over the nation. I also make a specialty of

HEAVY GEARING & MACHINERY
For Paper, Cotton and Grist Mills.
S. MORGAN SMITH, York, Pa.

THE IMPROVED LANCASTER Turbine Wheel.

Write for Descriptive Catalogue.

"THE COLIAU"
NEW AND IMPROVED
HOT BLAST CUPOLA,
(patent March, 1884), and New
Smokeless and Automatic Feed
Boiler (pat. 1886, in U. S.).
Correspondence solicited for
plans of foundries and the eco-
nomical working of cupolas, the
saving of fuel in melting iron
and steel, and in the production
of steam. Address VICTOR
COLIAU, Mechanical Engineer
and Architect, 287 Jefferson
Avenue, Detroit, Mich.

FOR Ice-Making & Refrigerating Machinery,

ADDRESS THE

Ring Refrigerating & Ice Machine Co.

OFFICE:

218 CHAMBER OF COMMERCE,
ST. LOUIS, MO.

OILLESS BEARINGS.
They will run for years
without oil. Perfectly
clean. No cutting or
danger of fire from
overheating. Send for
New Circular of interest
to users of Loose
Pulleys.

North American Metaline Co., 37 Bleeker St., N.Y. City.

BUY AN DON'T ENGINE OR BOILER

Until you have seen our circulars, Engines complete from 5 to 110 horse power, both Vertical and Horizontal, at prices below those of other reputable makers. 1400 in use. Boilers of every style. Automatic Engines for Electric Lights. Centrifugal Pumping Machinery for Draining or Irrigation. Established 20 years. Perfect satisfaction guaranteed. Ask for Circular M and address

Morris Machine Works,
BALDWINVILLE, N. Y.

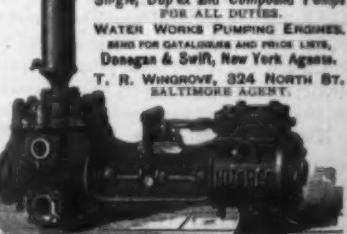
Lancaster Turbine Wheel Co., Lancaster, Pa.

HUGHES STEAM PUMP CO.

CLEVELAND, O.

MANUFACTURERS OF
Single, Duplex and Compound Pumps
FOR ALL DUTIES.

WATER WORKS PUMPING ENGINES.
SEND FOR CATALOGUE AND PRICE LIST,
Dengen & Swift, New York Agents.
T. R. WINGROVE, 324 NORTH ST.,
BALTIMORE AGENT.



PERFORATED METAL
FOR
COTTON SEED OIL MILLS
RICE MILLS
MINING SCREENS &
THE ROBERT AITCHISON
PERFORATED METAL CO.
16 Van Buren St. Chicago, Ill.



The Markets.

OFFICE MANUFACTURERS' RECORD,
BALTIMORE, November 13, 1889.

Another week of uncertainty in the iron trade is to be noted. The two reasons to be assigned for the quiet condition of trade are: First, the high prices makers are asking for their products, and second, the heavy buying that has been done for weeks past, placing consumers in position to wait a little while to see how things are going. Buyers themselves are not certain that the present high prices and upward tendency will continue. All furnace and mill products command outside prices where early deliveries are possible. Rumors are heard on all sides of an intended advance by this or that maker, and the refusal of others to accept business at any price. Buyers, in many cases, are placing their orders on the condition that prices shall be named at date of delivery. A few furnaces will blow in Pennsylvania, but the increased output of Northern furnaces, so far as estimates have gone, is trifling when compared to the possibilities of an expanding demand through the winter. The iron trade would be glad to know the probable extent of the new requirements. A great many inquiries are being made. Efforts are being made to ascertain the probable extent of railroad orders, both for steel rails and other material, but the only satisfaction that can be obtained is the information that large purchases of everything from locomotives down to spikes will be made. The fact is, that the railroad managers have not yet determined just how much to buy. Steel rails are very strong in Pennsylvania mills at \$31.50 to \$33.50, according to size of order. No large orders were placed last week. Inquiries were made late in the week for about 60,000 tons in mills in that State, but the quotations given do not promise immediate orders. Bessemer pig has advanced to \$20 at Pennsylvania furnaces east, and to \$21 to \$21.50 in the western part of the State, with \$21.50 to \$22 as the market price in Chicago. Spiegel is quoted at \$34 to \$34.50 at New York for 20 per cent., and ferro manganese \$85 to \$90. Billets and blooms have advanced 50 cts. to \$1.00 within a week. Coal has moved up 15 cts. per ton in the Lehigh region, and a 10 per cent. advance in wages has been granted to the furnace workers in the Mahoning valley. Symptoms of an advancing tendency and a hardening in prices can be seen in every direction. To what point this tendency may go it is impossible to predict with any safety at present. This uncertainty is creating the hesitancy noted among buyers of material.

The crude iron market is very firm, with prices in Eastern Pennsylvania at \$16, \$17 and \$18 respectively, although some makes of foundry are quoted at \$17.50 and \$19 for No. 2 and No. 1, and these prices are paid. Indications point to a very sharp demand in December, and perhaps sooner.

The car builders have been buying a good deal of bar iron at 1.75 to 1.80. Refined iron is strong at 1.95 to 2 cts. in Eastern and 1.80 to 1.90 in Western Pennsylvania. In Chicago markets common iron is 1.90 at store. The car builders are so far oversold that some of them are unwilling to even bid on new work offered. The necessities of the railroad companies may become so urgent that prices for railway supplies may be crowded up beyond a safe point.

Merchant steel of all kinds is very active. The agricultural implement makers in the West are large buyers; where orders used to be given for 25 tons, are now for 100 to 200 tons each. A good many mills have recently withdrawn quotations for both iron and steel. Makers everywhere are anxious to complete the bulk of pres-

ent engagements before entering upon new ones.

The demand for nails of all kinds is remarkable. For years past nail makers have been in the dumps over low prices and disorganized trade; they are now having their inning. Stocks are exhausted and mills and factories all oversold. Prices have advanced step by step, until now iron nails are hardly to be had at \$2.10 in Eastern markets, and steel nails are \$2.30, while in Chicago markets cut nails are \$2.40 and wire nails \$3.10, and even these figures are likely to be advanced a little.

Cincinnati markets are very strong, and large transactions in foundry and forge iron have just been closed. No quotable advance has been made, and buyers are placing orders as fast as possible.

The coke trade is strong and active, but buyers East and West have been much annoyed by slow deliveries.

The ore trade at Cleveland is very active, and Bessemer ore has advanced still further. The mining and shipping capacity is barely equal to the market requirements.

Business throughout the South is also very active. Cars are scarce and shippers and consignees are complaining, but make the best of it. More money is needed in the South, as well as better banking facilities, which the capitalists of the North will probably not be slow to provide. Most of the furnace companies in the South have long-running contracts on hand, and are making moderate margins. At Louisville quotations are, for Southern coke No. 1, \$16 to \$16.25; No. 2, \$15.50; No. 3, \$15.

HARDWARE.

Orders are not as frequent as they have been for the past month, but this is to be expected at this season of the year. The new Tack Association is working nicely, and the advance in price has been reasonable. Copper rivets and burs are much firmer than they were, owing to an improved condition of the copper market. The Carriage Bolt Association is being firmly held to, and the market is healthy. Handled hoes are still very much demoralized, and very low prices have been given. Collections in the South and Southwest have been very satisfactory. Wrought butts are very much firmer, some factories having advanced their prices about 10 per cent. Philadelphia carriage bolts are firm, and higher prices are expected.

DIXON'S

GRAPHITE PIPE JOINT CREAM
For Steam or Gas Pipes, Bolts, Screws, etc.
Makes a Perfect Joint that can be opened with ease
in three years or thirty years.
JOSEPH DIXON CRUCIBLE CO.
JERSEY CITY, N. J.

Cotton and Woolen MACHINERY.

50 Crompton Fancy Cotton Looms, nearly new, 36 inch reed space, for 12 Harnesses, 4 boxes at one end, 1 at the other.

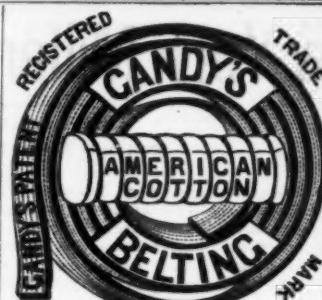
My Store Houses here have over 2 ACRES of floorage, which is covered with good machinery, including nearly full systems for Cotton and Woolen Mills.

JEREMIAH CLARK,
Lowell, Mass. Office, 63 Dutton St.

CLARK'S Drying, Ventilating & Exhaust Fans
With First-Class Engine Attached.
Get the best Fan for Drying and Ventilating in the market.

The Clark light-running Exhaust Fans. Self-oiling Bearings. Adjustable Wings; also first-class high speed Engines attached to frame of Fan when desired. Fans and Engines in combination or separate at lowest prices. Catalogue free.

GEORGE P. CLARK, Box C. Windsor Locks, Ct.



The "Original Gandy"

Sewed Cotton Duck Belting,

Especially adapted for Main Drivers, Saw Mills, Cotton Gins, Cotton Presses, and for all places where belts are subjected to moisture or atmospheric changes, the "GANDY" stands paramount.

For further information, prices, etc., write

The Gandy Belting Co.

BALTIMORE, MD.

SOUTHERN AGENTS: Smith & Courtney, Richmond, Va. Atlanta Rubber Co., Atlanta, Ga. Baker, Sloo & Co., New Orleans, La.



PAGE BELTING COMPANY,

SECTION OF COPPER WIRE-SAWED LIGHT DOUBLE BELTING.

We Manufacture

ple and special grades

Also the "HERCULES" Lacing

The Hercules is
Lacing; combines
Raw Hide and of
Send for Catalogue
Grades of Belting to use

MADE BY PAGE BELTING CO. EXTRAS FULLY WARRANTED

all the sta-

of Leather Belting.
and the PATNA BRAND Lacing,
mechanically made; is a buffed
the good qualities of ordinary
Page's Patent. Try it.
No. 31, describing the "Kinds and
for Different Kinds of Work."

CONCORD, N. H., U. S. A.

BRANCHES—Boston, New York, Chicago, St. Louis and San Francisco.



SHULTZ BELTING CO.

MANUFACTURERS OF

LEATHER BELTING.

ST. LOUIS, MO.

—AGENTS IN ALL CITIES—

THE PERFECTION

Meat Cutter

THE LATEST, BEST AND MOST IMPROVED
FOR FAMILY USE.

No. 1 \$1.50 No. 2 \$2.00 No. 3 \$3.00

DISCOUNTS and Descriptive Catalogues
on application to manufacturers.

AMERICAN MACHINE CO.

Manufacturers of Hardware Specialties,

N. E. COR. LEHIGH AVENUE AND AMERICAN ST.,

PHILADELPHIA, PA., U. S. A.

Advertise in the MANUFACTURERS' RECORD.

S. OBERMAYER FOUNDRY SUPPLY MFG. CO. Foundry Facings.

Importers and Refiners of
GRAPHITE
Or Black Lead
AND
Lubricating Plumbago.

NO CHARGE FOR TRIAL SAMPLES.



Foundry Supplies.

SHIPPERS OF ALL KINDS OF
Molding Sands

Monk's Molders' Tools.

CINCINNATI, OHIO, U.S.A.

Write for Catalogue and Price List.

The Sturtevant Patent Progressive Lumber Dry Kiln THE OLDEST IN THE FIELD.



Send for Illustrated catalogue No. 32 of Steam
Hot Blast Heating and Drying
Apparatus.

Complete working
drawings of KILNS
of all sizes furnished
to customers free of
charge.

B. F. STURTEVANT, 34 Silver Street, cor. Franklin, **BOSTON, MASS.**

BRANCHES—91 LIBERTY STREET, N. Y., 31 N. CANAL STREET, CHICAGO.



Keep Your Belts from Slipping

AND SAVE YOUR POWER BY USING

FRiction COVERING FOR PULLEYS.

Satisfaction Guaranteed. Easily Applied. No Rivets. Effective. Agents Wanted.

NATIONAL PULLEY COVERING CO., BALTIMORE, MD.



MACHINERY.

Steam Engines and Boilers.
Shafting, Pulleys and Hangers.
Brass Goods, Fittings and Tools.

Boiler Feeders and Pumps.
Mill Gearing and Supplies.

MODERN ROLLER MILL.

Electric Light Engines, Single and Double.

Brewers' and Coopers' Machinery.

Laundry and Bottlers' Machinery, and Machinery in general.
Patterns Made to Order. Bolting, Hose, Packing, etc.
Machinery Repaired on Short Notice.

Millers' Rolls Reground and Corrugated.

Send for Descriptive Catalogue, Price and Pattern List.

Geo. J. Fritz, Founder & Machinist,
Telephone 2014.

2008 to 2028 S. Third St., St. Louis.

RICHMOND IRON PAINT CO.

WEATHERPROOF, WATERPROOF AND FIREPROOF.

Never Cracks, Blisters or Peels. Especially adapted for Tin, Zinc, Copper, Iron, Shingles and Board Roofs.



DAMP AND IMPERFECT WALLS ARE ALSO RENDERED DRY BY THE USE OF THIS PAINT AND CEMENT.

Agents wanted for the State of Maryland and all unclaimed territory in the South.

N.T. PATE & CO., 1007 E. City St., Richmond, Va.

Gen. Agency "Vulcan Fire-Proof and Solerla" Paints.



WOOD SPLIT PULLEY,

MANUFACTURED BY

Chattanooga Wood Split Pulley Co. Chattanooga, Tenn.

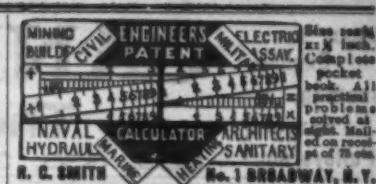


Steam Launches STEAM YACHTS, TUG BOATS,

Marine Engines and Boilers, Propeller Wheels and Boat Machinery.

Send for free Illustrated Catalogue.

CHAS. P. WILLARD & CO.,
236 Randolph St., Chicago, Ill.



J. H. PRATT.

Analytical Chemist,
Laboratory 1826 Third Ave., Birmingham, Ala.

Analyses of Ores, Slags and Coals carefully made.

Reports on properties, etc.

WIRE RAILING

and Ornamental Wire Works.
DUFUR & CO. 113 & 115 N. Howard St., Baltimore.

Wire Railing for Cottages, Lawns, Gardens, Offices and Balconies; Window Guards, Tree Guards, Wire Cloth, Sieves, Fenders, Caps, Sand and Coal Screens, Iron Bedsteads, Chairs, etc.



Made of galvanized iron and copper. Absolutely no leakage from joints; no dripping or sweating; fire-proof; ventilating.

Galvanized iron and copper cornices and gutters.

Sheet metal work for buildings. Send for illustrated circular.

E. VAN NOORDEN & CO.,

283 Harrison Ave. BOSTON, Mass.

The Jeffrey Mfg. Co.

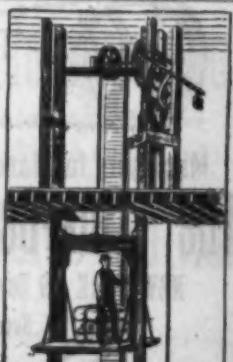
131 West State St., Columbus, O.
MANUFACTURERS OF
ELEVATORS, CONVEYORS,
DRIVING BELTS, for Handling



Barrels, Boxes, Pales, Grain, Coal, Ores, &c.
Illustrated Catalogues sent on application.
Correspondence solicited.

Bates' Hand Elevators

Pat. April 18, 1871. Reissued July 25, 1876.
OVER 6,000 IN USE.



Adapted for Warehouses, Stores, Factories, Hotels, Public Institutions and every place where merchandise, &c. is transferred from one story to another.

JAMES BATES,

PATENTEE,
Nos. 1, 3 & 5 President Street, BALTIMORE.

Steam
Engines,
Shafting,
Hangers,
Pulleys, etc.

CANNING MACHINERY,

The Warfield Manufacturing Co.

336, 338, 340, 342 NORTH ST. - - BALTIMORE, MD.

Warfield's
Green Corn
Cutter.

E. W. BLISS CO.

PLYMOUTH, PEARL, JOHN AND ADAMS STREETS,
OFFICE—17 ADAMS STREET. BROOKLYN, N. Y.
Presses, Dies and Special Machinery
FOR SHEET METAL WORKERS.



Cam and Toggle Drawing
Presses, Power Presses, Foot
Presses, Automatic Drop
Presses for Forging and
Stamping, Double Seaming
Machines for round, square and
oval work; Circular Shears,
hand and power; Squaring
Shears, foot and power;
Canning Machinery, Dies of
every description, Tools for
working Sheet Metals, Petro-
leum Can Machinery, Special
Machinery. Send for Circu-
lars.



THE
Long & Allstatter Co.
HAMILTON, OHIO.
Double, Single, Angle-Bar, Gang, Horizontal,
Twin, Boiler, Spacing, Gate, Multiple, BELT and
STEAM-DRIVEN.
Punches and Shears,
Over 300 Sizes.
ALSO
POWER CUSHIONED
HAMMER.

Small Double Machine. Send for New Catalogues. Small Single Machine.

TRANSMISSION OF POWER.

Machinery for Handling any Material in Bulk or in Packages.
The Link-Belt Engineering Company,

NEW YORK 49 Dey Street. Nicetown, PHILADELPHIA, PA.

Successors to **BURR & DODGE, PHILADELPHIA,**

AND
EASTERN BRANCH LINK-BELT MACHINERY CO.

New York.

EWART DETACHABLE LINK-BELTING,
DODGE CABLE CHAIN
ELEVATORS, CONVEYORS, LINK DRIVING BELTS.



NIAGARA STAMPING & TOOL CO.

MANUFACTURERS OF

TINNERS' MACHINES & TOOLS,

SQUARING SHEARS, PRESS DIES, &c.

FOR WORKING SHEET METAL.

Fruit Can Dies and Tools.

CANNERS' OUTFITS.

OFFICE AND WORKS:

Cor. RANDALL & SUPERIOR STS., BUFFALO, N. Y.

Write for Catalogue and Price-List and mention

this paper.

Amos H. Hall,
CEDAR
Vat and Tank Factory
N. Second St., above Cambria.
PHILADELPHIA, PENNA.
TANKS for Brewers, Dyers, Paper Mills, Factories, Cotton and Woollen Mills.

ESTABLISHED 1847.
BALTIMORE MILL FURNISHING WORKS.

B. F. STARR & CO.
BALTIMORE, MD.

MANUFACTURERS OF

BURR STONES FOR ALL PURPOSES.

Portable Mills, Roller Mills, Smut Machines, Shafting, Pulleys, Gearing and General Mill Machinery.
Importers of Bolting Cloths and General Mill Furnishings.
The Leading Mill Furnishing House on the Atlantic Seaboard.

RICHMOND CITY MILL WORKS
RICHMOND, INDIANA.
CORN & COB CRUSHERS,
FRENCH BUHR MILLS,
PULLEYS, SHAFTING, BELTS, &c.
EVERY MILL GUARANTEED.
SEND FOR DESCRIPTION AND PRICES.

Complete Mill Outfits, Rolls or Buhrs.

Every OIL MILL Should Have

THE SCIENTIFIC OIL CAKE CRUSHER AND GRINDER

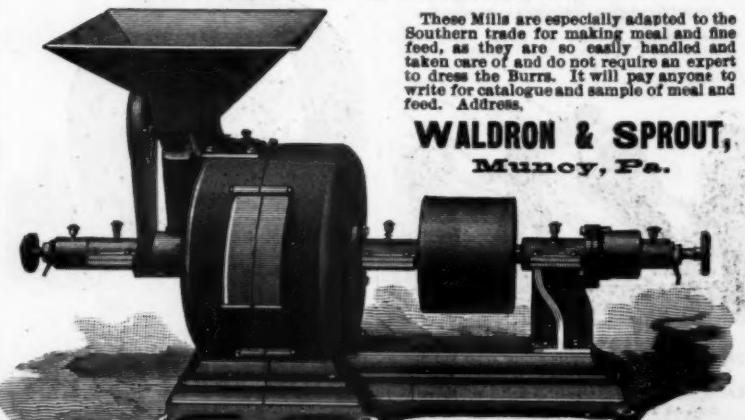
SEND FOR CATALOGUE OF THESE AND
CRUSHERS AND GRINDERS FOR ALL KINDS OF FERTILIZERS.
THE FOOS MFG. CO., SPRINGFIELD, OHIO.

FRENCH BURR MILLS,

FOUR SIZES—12, 16, 20 and 30 Inch.

These Mills are especially adapted to the Southern trade for making meal and fine feed, as they are so easily handled and taken care of and do not require an expert to dress the Burrs. It will pay anyone to write for catalogue and sample of meal and feed. Address,

WALDRON & SPROUT,
Muncy, Pa.



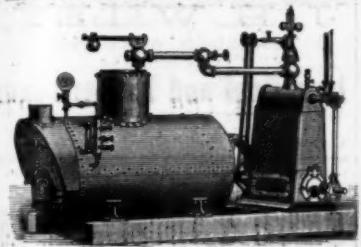
MANUFACTURERS OF

French Burr Mills, Corn Ear Crushers and Hay Tools.

The WELLINGTON BELT HOLDER
LATELY
IMPROVED.

Just the thing to shift large belts driving Dynamos, Blowers, Fans, Saws, etc. Belt stops and slackers when machine stops. Thousands in use, cost very low. Sent on trial. Permit us to quote you prices.

W. R. SANTLEY & CO. Wellington, Ohio



LOCOMOTIVE or BOILERS mounted as shown, with COMPACT POWERFUL ENGINES, up to 40 H.P. NOT LIKE ANY. Castle Engine Works, Indianapolis, Ind.

LUDLOW VALVE MFG. CO.

Office and Works: 938 to 954 River St., and 67 to 83 Vall Ave., Troy, N. Y.

VALVES

Double and Single Gate, $\frac{1}{4}$ inch to 48 inches; outside and inside Screws, Indicators, etc., for Gas, Water, Steam, Oil. SEND FOR CIRCULAR.



Also Fire Hydrants, Yard and Wash Hydrants, Check and Foot Valves.

Laundry Machinery.

LARGEST STOCK.

LATEST IMPROVEMENTS.

FULLEST LINE.

Washing Machines, Ironing Machines, Centrifugal Machines, Mangles, Wringers, &c. BOILERS AND ENGINES.

OUTFITS FOR

Hotels and Public Institutions.

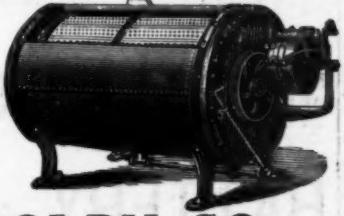
R SPECIALLY.

THE A. M. DOLPH CO.

222 WASHINGTON STREET,
CHICAGO, ILL.

40 CORTLANDT STREET,
NEW YORK.

BOR. 9TH ST. & FREEMAN AVE.
CINCINNATI, O.



Subscribe to the MANUFACTURERS' RECORD



Southern Electrical Supply Co.

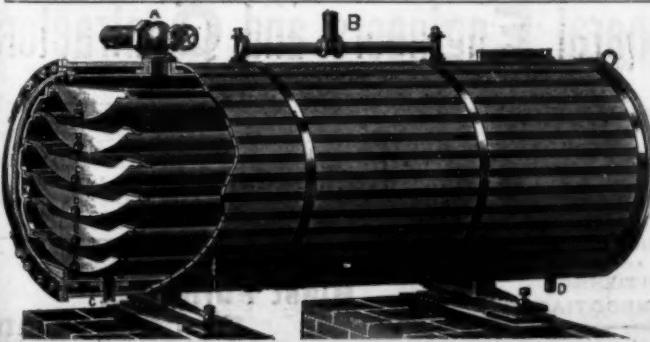
HEADQUARTERS FOR

Electrical Goods of all Kinds, from a Wire Staple to a Dynamo.

Okonite Wire Cables and Tubing. Candee Weather-Proof Line Wire. Okonite and Manson Tapes.

Write for Catalogues.

310 N. Third Street, St. Louis, Mo.



The HOPPES Live Steam Feed-Water Purifier

SOLD ON TRIAL.

We are prepared to furnish Estimates for Purifiers and Heaters, set up complete, especially on Large Steam Plants. Guaranteed to Keep the Boilers Free from Scale.

We also manufacture an EXHAUST STEAM HEATER superior to all others.

SEND FOR CATALOGUE G.

THE HOPPES MFG. CO., SPRINGFIELD, O.

To Manufacturers.

Arkansas Investments.

FREE SITES and Coal 25 cents per ton to manufacturers desiring location in the Southwest. Cotton, Timber, Limestone, Iron, Coal Lands and Town Sites for Sale. Investments made for non-residents.

HUNTINGTON,

Sebastian County, of two years' growth. Population over 2,000. Lies in the heart of the mineral district. Correspondence solicited.

A. L. RAYMOND, General Agent, Huntington Town Co., Huntington, Ark.

Barnes' Patent Foot Power Machinery.

Complete outfit for Actual Workshop Business. Lathe for Wood or Metal, Circular Saw, Planer, Shaper, Formers, Mortise,

Drillers, Etc. Price

Our Patent Velocipede Foot-Power is without question the best yet applied to Lathes. Read a few expressions from those using them: "I do not see how your lathe can be produced at so low cost." "The velocipede foot-power is simply elegant." "Can turn a whole day and feel as little tired as though only working a minute." "In regard to the velocipede from you, I consider the price worth it." "I set at the lathe for 11 hours, cutting off and threading 1½ inch pipe. Those who saw it declared it equal to 15 hour job in machine shop." "Using the velocipede power, the operator can hold a steady hand for doing the work." "For doing actual business, the Lighter is the heaviest, gives me the most speed." "The big Lathe is equal to 10 men turning two lathes." "What a saving in time, how you can make machines to pay you for so small sum of money." "The No. 6 Lathe is the most perfect tool I ever saw for the money." "I can do double the amount of work in the velocipede, than I can on any other style of foot-power lathe." "There is a tax on strength, the velocipede has no tax." "It is the best Lathe-power of any for lathes."

W. W. & JOHN BARNES CO., No. 381 Ruby St., Rockford, Ill.

THOMAS K. CAREY & BROS., of Light St., Baltimore Agents.

Nelsonville Foundry & Machine Company

MANUFACTURERS OF

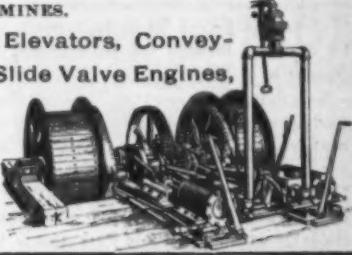
Endless and Tail Rope, Wire Rope, Haulage Machinery

FOR COAL MINES.

Friction Hoists, Chain Belting, Elevators, Conveyors, Coal Crushers, Automatic Slide Valve Engines,

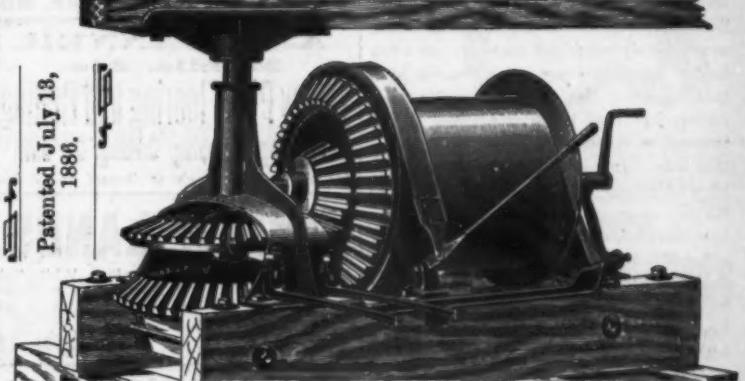
Duplex Pumps, Sheaves, Screens, Mine Cars and Mine EQUIPMENT GENERALLY.

NELSONVILLE, OHIO.



THE CONTRACTORS' PLANT MANFC. CO.

129 ERIE STREET, BUFFALO, N. Y. U. S. A.



AN IMPROVED HORSE POWER HOISTING MACHINE, with a combination of fast and slow speed. With fast speed a horse will lift 1,000 lbs. on a single line at a speed of 60 feet per minute, and with a single block 2,000 lbs. 40 feet per minute. With the slow speed a weight of $1\frac{1}{2}$ tons with a single line, and with a single block 3 tons; with two single blocks 5 tons; with double and single blocks 7 tons. The speed single line 30 feet per minute, with single block 15 feet per minute.

In this combination of gears the user has the advantage of two machines embraced in one, with a saving of 35 per cent. in cost and 60 per cent. in weight.

SIMPLE, DOES NOT GET OUT OF ORDER.

WRITE FOR ILLUSTRATED CATALOGUE OF

HORSE POWER HOISTING MACHINERY

For Bridge Builders, Contractors, Quarrymen, Mineral and Coal Miners, Masons and Builders.

DERRICKS AND CONTRACTORS' SUPPLIES. Mention this paper when you write.

Eastern Lumber Markets.

[Spec. correspondence MANUFACTURERS' RECORD.]
NEW YORK, November 12, 1889.

The New York lumber market presents several interesting features this week in consequence of unexpected purchases made by a number of small buyers in the city and country districts. Their purchases extend over the entire list of hard woods. A few good sales of soft woods were made, but the wholesalers are relied upon to supply these wants to the bulk of the trade from time to time as stocks are wanted.

The supply of New England spruce in this market was supposed to be large, but the liberal distribution during the past few days has run stocks down pretty low, and prices have been marked up.

There is a great deal of white pine coming in from the Lake ports, as the canals will soon close. From what we can learn, it is the intention of Michigan and Wisconsin manufacturers to enter upon logging operations on a large scale this year, and have even more lumber to start with next spring than they had last. Our information is to the effect that there is a little surplus of white pine in Northwestern markets, but, considering the increasing activity to be expected through the winter, it will amount to nothing.

Returning to the local trade, we find that dealers everywhere express a great deal of confidence in strong prices throughout the winter, and for reasons such as these: In the first place there is sure to be a heavy consumption of hard wood on account of the large amount of inside work that is to be done. Builders and contractors have had their time and attention occupied with outside operations this year, and much inside work that would have otherwise been completed, has been postponed. Then, as previously remarked, there are not a few buyers here who are apprehensive of a strike among the building trades next spring, and they think it prudent to get through as much work as possible before that time. Just in this connection it may be well to say that the wage-workers are taking more interest now in the 8 hour question; some of their leaders argue that as work is abundant, and employers forced to accept orders and execute them, it will be soon a good time to insist upon a recognition of the 8-hour day. The workers are a little afraid of the movement, and it is difficult to predict what the ultimate decision will be.

So far as prices are concerned, there is scarcely any change from previous quotations. The only concessions that are possible are from wholesalers, who are in position to immediately replace stocks sold on favorable terms; not all of them are so fixed. A good many Southern mills are oversold. Besides this, the season is winding up, and most wholesalers have only bought and piled up enough lumber to keep their regular trade going, and are therefore not anxious to unload excepting at their own prices.

We are receiving a good deal of yellow pine and there are some three or four cargoes soon to arrive; there are places and customers for all of it as soon as it is unloaded. North Carolina pine people are watching this market closely, meeting its requirements from day to day almost. Prices are unchanged all the way through.

We are being offered more or less Virginia oak, and find it suited to our requirements here. A good deal of cottonwood is arriving, and more or less cypress is constantly coming in. The receipts of Tennessee poplar are large, but nearly everything that comes in is already sold. Dealers are taking very little risk. The Association is in control, and we have confidence in the regularity of poplar prices. This market is generally supplied with an excellent assortment of all widths.

The cabinet-makers and furniture manu-

facturers are extremely busy this fall, mostly working overtime; in consequence, they are large buyers of hard wood, but they are very exacting customers in regard to quality, widths, lengths, etc., and the dealers who have the reputation of carrying the best assortments of the best lumber do business with them more quickly and to better advantage than the smaller dealers.

The Southern lumber manufacturers can rely, in a general way, upon an active market here for their products throughout the winter. A great deal of new work is being projected, and new markets are constantly opening. But in making shipments it is always well to be guided by the advice of some reputable dealer here who is in touch with buyers.

**A Profitable Business
FOR SALE.****Planing Mill**

IN CHATTANOOGA, TENN.

consisting of mill, dry-house, and complete outfit of machinery for the manufacture of doors, sash, blinds and all kinds of planing mill work, now in successful operation and running full time. Owner has grown rich and wishes to retire. Will sell mill, machinery, stock in trade and good will on easy terms, and lease real estate and use of side track for a term of years. This is a good opportunity for an energetic man to step into a good ready-made business.

ADDRESS

R. P. O. Box 573. Chattanooga, Tenn.

W. EDWIN PEREGOY & CO.

WHOLESALE AND COMMISSION

LUMBER, LOGS AND STAVES,

113 S. GAY STREET,

P. O. Box 438. BALTIMORE, MD.

A. C. DANNER,
Mobile, Ala.

Yellow Pine Flooring and Ceiling,
Stepping, Finishing, Decking, Car Sills,
And all kinds of Rough or Dressed Yellow Pine.

TIMBER LANDS.

Large and small tracts Yellow Pine, White Oak, Cypress Timber Lands; all Southern States. Timber estimated and reported upon in any Southern State.

W. H. HOWCOTT, New Orleans, La.

E. B. HUNTING & CO.

BALTIMORE, MD.

JACKSONVILLE AND FERNANDINA, FLA.
AND SAVANNAH, GA.

WHOLESALE MERCHANTS
AND MANUFACTURERS OF

Yellow Pine Lumber

Buy for cash on cars at Mills and sell delivered to all points reached by rail or water. Write Baltimore Office.

THOMAS J. SHRYOCK & CO.
YELLOW PINE COMMISSION
MERCHANTS.
Correspondence Solicited.
BALTIMORE AND WASHINGTON.

ELIAS EDMONDS,
Attorney at Law

SAN ANTONIO, TEXAS.

Makes the Litigation of Land Titles a specialty. Will also Lend Money for non-residents upon the best real estate security.

**THE CROWDUS
Electric Fare Box.**

The only perfect light at night. Simplest in construction. Easiest to clean. Registers each fare. Increases earnings. Exposes frauds. The smallest and neatest. Write for catalogue "B."

Electric Fare Box Co.

NASHVILLE, TENN.

JOHNSON, SHRYOCK & CO.**HARDWOOD COMMISSION MERCHANTS.**

Correspondence Solicited.

Office. - Shryock Building, BALTIMORE.



J. H. WILEY,
GADSDEN, ALABAMA.
LARGE BODIES OF
Iron, Coal and Timber Lands
FOR SALE.
Correspondence Solicited.

**THE
Mineral & Timber Land Co.
OF THE SOUTH.**

Capital - \$100,000.

Ex-Gov. John C. Brown President
Jere Baxter Vice-Pres't and Gen'l Man'r
J. H. Moore Vice President
T. F. P. Allison Vice President
Lewis T. Baxter Secretary and Treasurer

Mineral and Timber Lands in the Southern States Bought and Sold on Commission.

Agencies in New York, Chicago, Boston and London.

We call the attention of owners of large tracts of land to the unusual advantages offered by this Company. Address

LEWIS T. BAXTER,
Secretary and Treasurer.

Nashville, Tenn.

References: The bankers and business men of Nashville, Tenn.

\$80 will buy the best BAND SAW in the world. \$185 will buy our new PATENT BAND RESAWING MACHINE. \$100 will buy the BEST AUTOMATIC RIP SAWING MACHINE, weatherboarding attachments included, and one SAW. \$500 will buy the best 7-foot LOG MILL in the world.

For further particulars address

STANDARD MFG. CO.
110 to 125 Main Street, Edinburg, Ind.

**GANG LATH MILL
AND BOLTER COMBINED**
D. S. ABBOTT, OLEAN-N.Y.

PORTLAND CEMENT.

German and English Brands of Best Quality.

Send for tests and all particulars to ERSKINE W. FISHER,
WELLES BUILDING, No. 18 Broadway, NEW YORK.

Series Lamps.**BATTERY &
LAMPS.**

Write for Circular and Price List before buying elsewhere.

MINOR SCOVELL, Pres.

H. S. JACKSON, Vice-Pres.

W. L. CHERRY, Sec. and Tres.

The Scovell & Irwin Construction Co.

OF BIRMINGHAM, ALA.

Address all correspondence to the Branch Office,

Cole Building, NASHVILLE, TENN.

General Engineers and Contractors

For the Design and Construction of

**Water Works,
Sewerage Systems,**

Railroads,

FRANCHISES FOR
WATER WORKS
AND
FUEL GAS PLANTS
SOLICITED.

BONDS, STOCKS,
MORTGAGES,
AND OTHER
SECURITIES
NEGOTIATED.

Suburban Roads,

Blast Furnaces,

Fuel Gas Plants.

For Sale Cheap.
450 Standard Gauge Gondola or Coal Cars.
 For description, prices and terms address
A. S. MALES & CO., Cincinnati, O.
 If interested send for catalogue No. 12 of
 second-hand, and circular No. 27 of new
 rolling stock, etc.

Steam Fire Engines FOR SALE.

One Hunneman and one Button in first-class
 condition. Also all kinds of second-hand Engines
 and Boilers for sale cheap. For terms, prices,
 &c., address

Lowell Steam Boiler Works,
LOWELL, MASS.

Estimates given on New Work of
 every description.

FOR SALE.

Five Single Surfers. Three Double Surfers.
 Three eight-inch Matchers (four-sided).
 Two four-inch Matchers (four-sided).

Two twenty-four-inch Matchers (three-sided).
 ALL SECOND-HAND. Send for full list to

The PREBLE MACHINE WORKS CO.

38 & 40 W. MONROE ST., CHICAGO, ILL.

SECOND-HAND MACHINERY.

Iron Planer, planes 22 feet, 48x24, double heads.
 1 " " " " 22 " 26x24.
 1 " " " " 6 " 26x24.
 1 " " " " 3 " 19x10, New Haven,
 and other sizes also.
 Engine Lathe, 16 feet bed, 23 inch swing.
 2 " " " " 11 " 19 "
 2 " " " " 8 " 15 "
 and various other sizes.
 Pond's Vertical Boring Mill, 66 in.
 10 inch Plain Drilling Machine.
 1 " " " " "
 1 1/2 B. G. & S. F. " "
 1 1/2 in. Hewes & Phillips Shaping Machine.
 No. 3 Brown & Sharp Screw Machine.
 1 1/2 in. Slotter, automatic feed.
 Small 8 inch swing Foot Lathe.
 No. 3 Parker Press. 1 Arch Press for forming.
 Send for list Second-hand tools.

NEW YORK MACHINERY DEPOT,
 Brooklyn Bridge Store, 16, New York.

BARGAINS.
 Second Hand Machinery, Good Condition.

L. F. SEYFERT.

437, 439 and 441 N. Third Street, Philadelphia, Pa.
 1 100 h.p. Horizontal Engine, cyl. 18" x 24".
 1 80 h.p. Horizontal Engine Cylinder, 14" x 30".
 1 15 h.p. Stokes & Parrish Elevator Engine.
 1 15 h.p. Erie City Portable Engine and Boiler.
 1 Worthington D. Stm. Pump, cap. 175 gal. P. min.
 1 15 h.p. Agricultural Engine and Boiler on wheels.
 10 Engines, 4 to 30 h.p., Hor and Ver. best makes.
 1 10 h.p. Copeland & Bacon Hoisting Engine.
 1 Portable Hoisting Engines, 2 to 15 h.p.
 1 6 h.p. Frick Portable Engine and Boiler.
 Rumbler, Foundry Ladies, Jacket Kettles, etc.
 2 12 h.p. R. T. Boilers, 43" x 10" (28) 3" tubes.
 1 18 h.p. R. T. Boiler, 36" x 10", 3" tubes.
 1 35 h.p. Locomotive Boiler (30), 3" tubes.
 10 Upright Steel Tubular Boilers; new; 14-27 h.p.; cheap
 1 50' x 14' Pittsburgh Boring Lathe with chuck.
 1 50' x 14' Phillips Engine Lathe.
 1 20' x 15' Bishop Lathe, compound rest.
 1 Screw-cutting and Speed Lathes, 10-25x10-10.
 1 Bishop Planer, 31" x 24" x 12' 3" x 12' x 23".
 1 Lodge, Davis & Co. 21" Drill Presses.
 13 Drill Presses, from 10" to 25" swing, best makes.
 1 Houston 4-sided 4" Horizontal Moulder.
 1 24" Schenck Planer, Moulder and Matcher.
 6 24" Groddel & Water Double Surface, endless bed.
 2 Pony Planers and Surfers, all sizes.
 6 Muley Saws, complete. 2 Upright Moulder.
 Eastern Agency "Keasey" Woode Sp. Planer.
 Shaving, Pulleys, Hangers, Couplings, Belting, etc.
 Also full line of new machinery. Estimated furnished
 on application for Steam Plants and Mill Outfits.
 PLEASE WRITE FOR PRICES.

Second-hand Machinery in Good Order
FOR SALE CHEAP.

Engine Lathes—86 in. x 20 in., 60 in. x 17 ft.; 42 in.
 x 12 ft.; 32 in. x 18 ft.; 49 in. x 15 ft.; 34 in. x 10 ft.;
 in. x 8, 10 and 12 ft.; in. x 8 and 14 ft.; 25 in. x
 6 and 8 ft.; 1 each 24 in. x 10 and 24 ft.; 24 in. x 12
 ft.; 24 in. x 15 and 16 ft.; 18 in. x 10 ft.; 50 in. x 10
 ft.; 30 in. x 12 ft.; 1 each 16 in. x 6, 8 and 10 ft.;
 6 each 14 in. x 6 ft.; 1 each 15 in. x 5 ft.; 1 each 11 in. x 8
 ft. and 5 ft.; 1-10 in. x 34 ft., foot power.
 4 Brass Turner Lathes, assorted sizes.
 1 each Planer, 24 in., 24 in. x 5 and 8 ft.
 " " 30 in. x 30 in. x 8 ft.
 1 Planer, 34 in. x 38 in. 50 in. x 50 in. x 17 ft.
 " " 40 in. x 40 in. x 14 ft.
 " " 45 in. x 45 in. x 10 and 12 ft.
 " " 25 in. x 20 in. x 4 and 5 ft.
 " " 16 in. x 16 in. x 3 ft.
 1 Screw Planer, 28 in. x 8 ft.
 Engine Lathe, 22x22 feet, good order. Niles.
 12' Trav. H'd Shaper, 3 tables, almost new. Betts.
 " Taylor" Saw Mill, with top saw, will cut
 50" x 36". Good as new.
 2-foot Vertical B. & T. Mill. Niles.
 1 1/2-inch Gear Cutter. Gould & Eberhart.
 24x18x4-foot Planer. Ames.
 22x20x4-foot Planer. Putnam.
 Drop Hammer, 75 pounds.
 1 1/2 in. Radial Drill.
 Shaper each 6, 10, 12, 15, 20, 24 and 30 in. stroke.
 1 Crank Planer, 6 Lincoln Pat. No. 2 Millers.
 Universal Miller. Brown & Sharpe.
 1 each 2, 3, 4 and 5 Spindle Gang Drill.
 1 each Nos. 1, 2, 3, 4 and 5 Screw Machines.
 1 No. 9 Screw Machine. Jones & Lawson.
 1 each 40 & 60 lb. Vertical Hammers.
 1 No. 53 Ferracite Press. 2 Nut-Facing Machine.
 1 Foot Presses, assorted. 8 Power Presses, assorted.
 2 Punching and Shearing Machines, assorted.
 2 Return Tumbler Boilers, 16 H.P.
 1 Bolt Cutter, each 1/4 in. to 1 in., and 1/2 in. to 2 in.,
 1 No. 2 Hand Millers. Pratt & Whitney.
 2 Horizontal Engines, each 25 and 45 H.P.
 2 Horizontal Boring Machines, 36 in. x 6 ft.
 1 each 8 and 12-inch Slotters. Correspondence
 1 Power Mortising Machine. solicited.
 Also full line of New Machinery.

FRENTISS TOOL AND SUPPLY CO.,
 P. O. Box 256, 115 Liberty street, New York City.

For Sale.
BOILERS.
 41 Second-Hand and 23 New Boilers,
 13 Second-Hand and 19 New
ENGINES.
 At buyers' prices. Address
CASEY BOILER MFG CO., Chattanooga, Tenn.

FOR SALE CHEAP.

One BEMENT PLANER, 42x49" x 17 feet. Two heads on beam with power feeds. One Side Head with hand feed. Beam has vertical automatic feed.

One SELLERS PLANER, 38" x 36" x 8 feet. Two heads on beam with power feed. One PRATT & WHITNEY PLANER, 20" x 20" x 5 feet. The above being replaced with Open Side Planers. Address

DETTRICK & HARVEY, Baltimore, Md.

STEEL RAILS AND EQUIPMENT.

New and Standard Sections, 30 lb. and up. Second-hand.
 Locomotives, Passenger and Freight Cars, all descriptions, for sale.

O. W. CHILD & CO.
 115 BROADWAY, NEW YORK.

FOR SALE!

3 Hoisting Engines.
 4 Ingersoll Compressors.
 2 Root Rotary Blowers.
 2 Contractors' Locomotives, narrow gauge.
 1 Steam Shovel.
 1 Edison Dynamo, 450 Lamps, 16 c. p. capacity.
 25 36-in. Gauge Dump Cars.
 For particulars apply to

J. C. SAXTON,
 62 BROADWAY, NEW YORK.

FOR SALE.

Rails, Spikes, Fastenings, Frogs, Swivels and Crossings. Locomotives, Dummies, Cars, Wheels and Axles. Complete outfit for logging Roads and Street Railways. New and Second-hand.

WILLIAM MINNIGERODE, Dealer in RAILWAY SUPPLIES,
 ROOM 8, JOHNSTON BUILDING, CINCINNATI, O.

JAMES IRVINE, Pres. GEO. B. F. COOPER, Vice-Pres.

Established 1823.

GEORGE PLACE,
 Late the George Place Machinery Co.
Equipment of Railway and Car Works
 EQUITABLE BUILDING, 120 Broadway, NEW YORK.

REGINALD CANNING & CO.
 115 BROADWAY, N. Y., ROOM 30.

Railway Equipment

Have for Sale, for cash or on car trust plan,
 Locomotives, Passenger and Freight Cars of both
 Standard and Narrow Gauge roads. Whether you
 wish to buy or sell we solicit correspondence.

STEEL RAILS

COMPLETE CUTTING AND FITTING.

Logging, Mining and Plantation

RAIL AND TRAM ROADS.

Light Sections Rails and Spikes in stock.

Locomotives, Logging Cars, etc.

NEW AND SECOND HAND.

HUMPHREYS & SAYCE

10 WALL ST., NEW YORK.

BOILERS, ENGINES,

LIGHT LOCOMOTIVES,

RAILS and EQUIPMENT,

Cotton Gins, Saw Mills,

Wood - Working Machinery,

and Heavy Hardware.

F. A. ESTEP,

OFFICE AND WAREHOUSE:

Corner Market and Cowart Streets,

CHATTANOOGA, TENN.

Rails, Spikes, Fastenings, Frogs, Swivels and Crossings. Locomotives, Dummies, Cars, Wheels and Axles. Complete outfit for logging Roads and Street Railways. New and Second-hand.

WILLIAM MINNIGERODE, Dealer in RAILWAY SUPPLIES,

ROOM 8, JOHNSTON BUILDING, CINCINNATI, O.

JAMES IRVINE, Pres. GEO. B. F. COOPER, Vice-Pres.

WM. V. CAROLIN, Sec. & Treas.

W. M. V. CAROLIN, Sec. & Treas.

EMPIRE WRINGER CO., AUBURN, N. Y.

LINCOLN IRON WORKS,

MANUFACTURERS OF

MACHINERY

For Working and Handling

MARBLE & STONE

Send for Illustrated Catalogue, free.

Rutland, - Vermont.

Hardcore and Gneiss Trade: Quota one

\$5 Clay Pigeon Trap.

Electrolytes furnished gratis for catalogues.

Liberal commissions. No page book fee. Address

LIQWESKY CLAY PIGEON CO., CINCINNATI, I.

U. S. STANDARD

SCALES.

BENT ON TRIAL, FREIGHT PAID.

5-Ton Wagon Scales \$50.00.

GUARANTEED CURRENT. OTHER SIZES IN PROPORTION.

Portable, Dormant, Warehouse, R. R. Depot,

Track Scales, etc.

HUBBARD & CO., 86 Nassau St., N. Y.

THOMAS J. ANDREWS,
 Manufacturer of Steel Wheel Glass Cutters and Hard-
 ware Novelties, 3rd Cherry St., Philadelphia, Pa.

FLORIDA Heating Apparatus

FOR STEAM OR WATER.

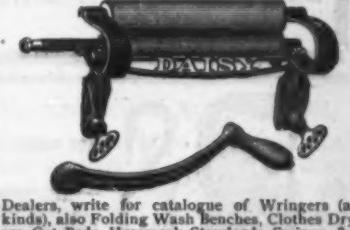
Over 6000 in ACTUAL USE

PIERCE, BUTLER & PIERCE MFG. CO.

SYRACUSE, N. Y., U. S. A.

The "DAISY" Wringer.

SIMPLE! EFFICIENT! DURABLE!



Dealers, write for catalogue of Wringers (all kinds), also Folding Wash Benches, Clothes Dryers, Cot Beds, Hammock Standards, Swings, &c. &c. to

EMPIRE WRINGER CO., AUBURN, N. Y.

GEM Wire Coat and Hat Hooks.

PATENTED.

STRONG

AND

DURABLE.

Made of a single piece of wire with a screw

thread on one end.

SIZES: 2, 2 1/2, 3 AND 3 1/2 INCHES.

MANUFACTURED BY

VAN WAGONER & WILLIAMS CO.

NEW YORK.

FOR SALE BY

W. H. COLE & SONS, Baltimore, Md.

A LONG FELT WANT SUPPLIED.

MARTIN'S Guides and Foot Locks

FOR SLIDING DOORS HUNG OVERHEAD.

This simple device has been adopted by all

Architects who have examined it, and has become

a positive necessity to all Overhead

Hanging Doors, and is being rapidly intro-

duced into all first-class houses.

Endorsed by Leading Architects.

TROY, N. Y., October 15, 1889.

Having specified Martin's Floor Plate and Bolts for

Sliding Doors for numerous buildings erected under my

supervision, I can say with confidence that they are the

best and most reliable.

B. J. ROACH, Architect, with

M. F. CUMMING, Architect, in Troy, N. Y.

TROY, N. Y., October 14, 1889.

I have specified the E. W. Martin Foot Bolt for hanging

Sliding Doors, and earnestly recommend their use for the

purpose.

E. W. — A sample will be sent on receipt of

75 cents. Send for circulars and cut.

MANUFACTURED BY

THE EMPIRE PORTABLE FORCE CO.,

LANSINGBURGH, N. Y.

FOR PRICES AND
 TERMS APPLY TO
L. Godfrey & Co., 147 Gaspee Street, Providence, R. I.

IRON & STEEL ROOFING

CORRUGATED & CRIMPED SIDING, CEILING ETC. MANUFACTURED BY W.G. HYNDMAN & CO., CINCINNATI, OHIO



UDELL TOWEL ARM

LATEST AND BEST IN THE MARKET.

Walnut and Antique Oak Finish.

TOWEL ROLLERS IN GREAT VARIETY.

We also manufacture a full line of ROPE REELS, CLOTHES BARS, HAT HOOKS, EXTENSION BROOM HANDLES AND CLOTHES POLES, and a large variety of goods for the HARDWARE AND WOODENWARE TRADES. Write for catalogue and prices.

Udell Woodenware Works, Indianapolis, Ind.

And 79 Reade Street, New York City.



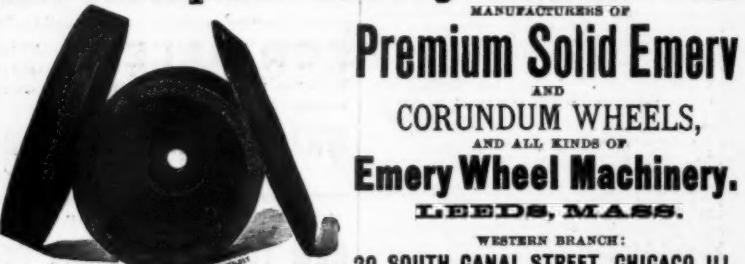
Waltham Emery Wheel Co., manufacturers, **WALTHAM, MASS.**

By our various processes we can guarantee satisfaction for the greatest variety of work.

EMERY WHEEL MACHINERY, **EMERY, CORUNDUM, Etc.**

These wheels can be bought of our agents or ordered direct.

Ira Dimock, Pres. Established 1867. J. L. Otis, Treas.
Northampton Emery Wheel Co. MANUFACTURERS OF



WESTERN BRANCH:
20 SOUTH CANAL STREET, CHICAGO, ILL.

NORTON EMERY WHEEL CO.



Complete Illustrated Catalogue mailed free upon application.
EMERY and Corundum Wheels,
Emery Wheel Machinery AND NUMEROUS SPECIALTIES.

THOS. K. CAREY & BROS.

26 Light Street, Baltimore.

Southern Agents.

WIER & WILSON

DIRECT REPRESENTATIVES:

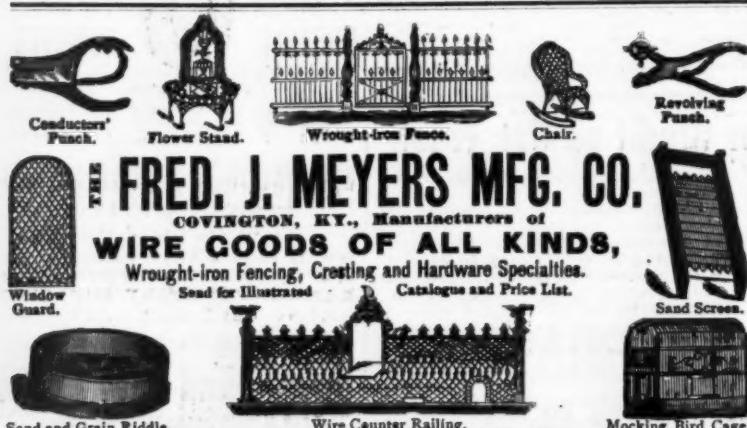
HUBBARD & CO.	Axes, Shovels, Hoes and Saws.
AMERICAN SCREW COMPANY.	Screws, Bolts, Wire Nails, &c.
A. FIELD & SONS.	Tacks, and Nails.
WHEELING HINGE COMPANY.	Wrought Goods, Butts, &c.
OLIVER BROTHERS & PHILLIPS.	Heavy Hardware.
L. D. FROST & SONS.	Philadelphia Carriage Bolts.
J. P. TOLMAN & CO.	Braided Sash Cord.
JOHN SOMMERS' SON,	Faucets.
NICHOLSON FILE CO.	Files.
HARTFORD HAMMER CO.	Hammers and Sledge.
THE HENRY O. HART MFG. CO.	Screen Frames, Lull & Porter, Blinds, Spring Hinges, &c.
SHEBLE & KLEMM.	Forks.
HOLROYD & CO.	Stocks and Dies.
BAKER CHAIN & WAGON IRON MFG. CO.	Wagon Hardware, Links, Rings, &c.
CLARKE BROS. & CO.	Bolts, Nuts, etc.
BRANFORD LOCK WORKS.	DRUID FELT CO.
WHITE MOUNTAIN FREEZER CO.	Fabric Roofing and Paint.

OFFICE No. 14 West German Street BALTIMORE, MD.



bear the above TRADE MARK, and are sold by all LEADING JOBBERS at Manufacturers' prices.

Covert Manufacturing Co. West Troy, N.Y.



THE FRED. J. MEYERS MFG. CO.

COVINGTON, KY., Manufacturers of
WIRE GOODS OF ALL KINDS,
Wrought-Iron Fencing, Creasing and Hardware Specialties.
Send for Illustrated Catalogue and Price List.



The "Ohio" Ensilage and Feed Cutters,

10 DIFFERENT SIZES.

The Largest and Most Complete Line of Cutters on the Market.

Embracing machines for both hand and power use.

OUR IMPROVED CUTTERS

possess many new and valuable features not found in other machines. They are simple, substantial, easy to operate, have greater capacity and are less liable to accident than other cutters.

Illustrated catalogue, with treatise on ensilage and plan of silo mailed on application. Liberal discounts to dealers.

SILVER & DEMING MFG. CO. Salem, O.

**PLEASE MAKE A NOTE OF IT.**

The celebrated Patent Edge Corrugated Iron Roofing, sheets having such great lineal rigidity, and side joints unapproached for tightness, is manufactured only by

The Cincinnati Corrugating Co.

PIQUA, OHIO.

Information promptly furnished.



THE CANTON STEEL ROOFING CO., Canton, Ohio.

Folded Lock Seam, Genuine
Steel Roofing
FIRE-PROOF SHUTTERS.
10 Foot Seamless Eave Trough.
Send for catalogue, price-list
and samples.

Corrugated Iron,

Crimped Edge Iron Roofing
and Siding, Beaded Iron Siding
and Ceiling, Water-Proof
Sheathing Paper, Roof Paint, &c.



The Kanneberg Roofing Co., Canton, O.

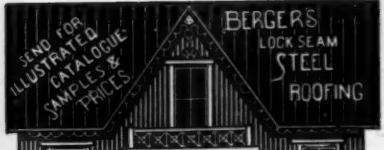
(The Originators of Strictly Genuine Steel Roofing.), MANUFACTURERS OF
The KANNENBERG PATENT,
Latest Improved
Folded Lock Seam,
Strictly Genuine Steel Roofing
Write for Catalogue, Price List
and Samples.

CORRUGATED IRON,
ALL DESIRED GAUGES AND LENGTHS.
BLACK PAINTED OR GALVANIZED.
SEND FOR OUR NEW DESCRIPTIVE CATALOGUE
ESTIMATES AND PRICES.

CAMBRIDGE ROOFING COMPANY, Cambridge, Ohio.

MANUFACTURERS OF
CROWLS PATENT STANDING
SEAM STEEL ROOFING
Plain Rolled, Crimped
Edge, Corrugated and
Beaded Roofing, Siding
and Ceiling.
Pure Steel a Specialty.
Send for Descriptive Catalogue.

THE BERGER MANUFACTURING COMPANY, CANTON, O.



DON'T make arrangements for ROOFING 'till you have seen ours.
It Exels all other Metal Roofs.



Issues Policies of Insurance after Careful Inspection
of the Boilers, covering Loss or damage to prop-
erty, and Loss of Life and Personal Injury

ARISING FROM STEAM BOILER EXPLOSIONS.

Full information concerning the plan of the Company's operations can be obtained at the
COMPANY'S OFFICE, Hartford, Conn., or at any Agency.

J. M. ALLEN, President.
J. B. PIERCE, Secretary.

W. B. FRANKLIN, Vice-Prest.
F. B. ALLEN, 2d Vice-Prest.

J. M. ALLEN, President.
FRANK W. CHENEY, Treas. Cheney Bros. Silk Mfg. Co.
CHARLES M. BEACH, of Beach & Co.
DANIEL PHILLIPS, of Adams Express Co.
RICHARD W. H. JARVIS, Pres't. Col't's Fire Arms Mfg. Co.
THOMAS O. ENDERSON, Pres't. of the United States Bank
ARD CO.
GEN. WM. B. FRANKLIN, late Vice-Prest. Col't's Patent
Fire Arms Mfg. Co.
NEWTON CASE, of the Case, Lockwood & Brainerd Co.
Marland Department—LAWFORD & McKIM, Gen. Agents 228 Holiday St., Baltimore.

GUTTA PERCHA ROOFING!

The Great Roofing for the South. Send for Southern Manufacturers' References. For Steep
or Flat Roofs, Factories, Mills, Lumber Sheds, etc. Send for Catalogues,
Testimonials, Samples, etc.

Empire Paint & Roofing Co., 1128 & 1130 Race St., Philadelphia, Pa.

LOWE & TUCKER, Chattanooga, Tenn.

— DEALERS IN —

Pig Iron, Iron Roofing,

RAILROAD AND FURNACE SUPPLIES.

DRUID FABRIC ROOFING

The Cheapest, Most Durable and Desirable
Roofing Material on the Market.

It is Water-Proof, Weather-Proof, Acid-Proof and practically Fire-Proof. Endorsed by
the New England Mutual Fire Insurance Co.

This roofing is specially recommended to owners of city and country property; it can be
applied without the aid of skilled labor. Everyone can be his own roofer at very small
cost. We put on this roofing when it is desired.

Druid Elastic Paint

Is the most Elastic, Durable and Economical
Paint known for Tin Roofs, Smoke Stacks,
Boilers, Boiler Fronts, Bridges and all metal
and wood surfaces. It is fire-proof, water-proof
and acid-proof; it resists all rust as well as acid
and smoke fumes; it will not peel, crack or
blister. Especially adapted for making walls and northeast exposures water-proof. Bricks painted
with two coats of this compound will resist a water pressure of 200 pounds to the square inch.
The same applies to cement and mortar work. Send for prices and further information.

DRUID FELT CO.

7 S. GAY STREET, BALTIMORE, MD.
MANUFACTURERS.

BUNDY RADIATORS

Consist of LOOPS, a BASE and a
Top in the simplest form pos-
sible in any Radiator.



— 13,000,000 —

SQUARE FEET NOW IN USE,
which are heating 10,000 of the largest and
finest buildings in the country, which
should prove beyond a doubt that the
BUNDY RADIATOR is the best made

MANUFACTURED BY

A. A. GRIFFING IRON CO.

662 Communipaw Avenue, Jersey City, N. J.

Send for new Catalogues.

HAINES, JONES & CADBURY CO.

MANUFACTURERS OF

PLUMBERS' MATERIAL,
1186 Ridge Avenue, Philadelphia, Pa.

MILNER & KETTIG,

BIRMINGHAM, ALA.

WRITE FOR CATALOGUES AND PRICES.

Price guaranteed as low as any house in this line in the United States.

MANUFACTURERS' RECORD.

Sliding Doors Hung Overhead.

The accompanying cut represents a new article in builders' hardware. It was invented and patented by a practical builder, who had long felt the necessity of some device by which overhead sliding doors could be made to shut closely and the warp and spring of their lower ends be overcome.

The floor plate is only 5-16 inch thick, beveled each way, and is screwed to the floor midway between the doors, and the bolts are mortised flush in the faces of the doors at their lower ends. The bolts are then set by the machine screw in the face so they will project below the lower edge of the door just far enough to catch in the guiding groove of the floor plate, but not long enough to drag on the floor, so that the door in closing will be guided to the center of the floor plate.



MARTIN'S GUIDES AND FOOT LOCKS.

These guides may be used for locking one-half of a pair of doors, when desired, by dropping the bolt into the slot provided for it in the floor plate, or they form a perfect lock for a pair of doors when used in connection with a hook, as the floor plate holds them in the center of the opening and will not allow them to move on their hangers.

They are also said to be perfect stops to prevent the doors from sliding back into the pocket, by placing the guide which comes with the hanger so the bolt will strike against it when the door is pushed back to its proper position.

This simple device, it is claimed, has been adopted by all architects who have examined it, and become a positive necessity to overhead hanging doors, and is being rapidly introduced into all first-class houses. The manufacturers are the Empire Portable Forge Co., of Lansingburg, N. Y.

EMERY GOODS AND GRINDING MACHINERY.—The Norton Emery Wheel Co., Barber's (Worcester), Mass., publish an elegantly illustrated descriptive catalogue of their emery and corundum goods and grinding machinery, containing cuts, diagrams, price-lists, etc. The company's long experience enables them to supply the best appliances made of the best materials and warranted to satisfy the demands of the trade.

ICE-MAKING AND REFRIGERATING MACHINERY.—Seldom, if ever, has there issued from the press a handsomer or more thoroughly descriptive trade publication than the illustrated catalogue of the Consolidated Ice Machine Co., of Chicago, Ill. The company furnish ice-making and refrigerating machinery and apparatus for breweries, packing-houses, distilleries, oil refineries, chemical works, dairies, fruit houses and cold-storage depots.

Manufacturers in Iron and Wood desiring Plain, Broad Insurance at Moderate Rate should address the General Fire Insurance Company (Mutual), 96 Broadway, New York. Edward A. Swain, President.

E. HARRINGTON, SON & CO.

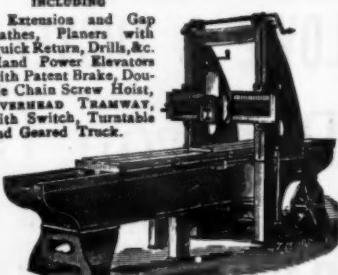
Established 1867.
Works and Office,
N. 15th St. & Penna. Ave., Phila., Pa., U.S.A.

Manufacturers of a full line of

Iron Working Machinery,

INCLUDING

Expansion and Gap
Lathes, Planers with
Quick Return, Drills, &c.
Hand Power Elevators
with Patent Brake, Double
Chain Screw Hoist,
OVERHEAD TRAMWAY,
with Switch, Turntable
and Geared Truck.



Gear Cutting a Specialty. Send for estimates.

Represented by J. O. MAYNARD, 12 Cortland St., N. Y.; C. E. KIMBALL, 93 Oliver St., Boston; W. BUCHNER, 100 Main St., Cincinnati.

McShane & Bell & Foundry

Fine Iron and Brass Castings Made to Order.
Manufacture those celebrated Bells for Town Clocks, Court-Houses, Cotton Mills, Factories, etc. Prices and catalogues sent free. Address H. McSHANE & CO. Baltimore, Md.

S. STEPH PIANOS

THE BEST.

Office and Warehouses, - 9 N. Liberty Street.
BALTIMORE, MD.

Ryder & Dearin

FINE COMMERCIAL PRINTERS.
PHOTO-ENGRAVING IN ALL ITS BRANCHES.
Specialists in fine Machinery and general Wood Engraving, Portraits, Buildings, etc. Artistic designs in Letter and Bill Heads, Business Cards, Display Lettering for advertising purposes, etc. Best work. Lowest prices. Electrotyping at lowest rates. 91 WESTMINSTER STREET, PROVIDENCE, R. I.

A. ATLANTIC TRANSPORT LINE,

BETWEEN BALTIMORE AND LONDON

Calling at Swansea and Philadelphia on the outward

passage.

S.S. Minnesota, 5,000 tons. S.S. Missouri, 4,000 tons.

S.S. Maryland, 4,000 tons. S.S. Michigan, (Bldg.)

S.S. Montana, 4,000 tons. S.S. Mississippi, (Bldg.)

S.S. Maine, 4,150 tons.

BALTIMORE STORAGE & LIGHTERAGE CO.

236 La Salle Street, } and 10 Fenchurch Street,

Chicago, Ill. } London.

409 Second Street, Baltimore, Md.

ATLANTIC TRANSPORT LINE,

BETWEEN BALTIMORE AND LONDON

Calling at Swansea and Philadelphia on the outward

passage.

S.S. Minnesota, 5,000 tons. S.S. Missouri, 4,000 tons.

S.S. Maryland, 4,000 tons. S.S. Michigan, (Bldg.)

S.S. Montana, 4,000 tons. S.S. Mississippi, (Bldg.)

S.S. Maine, 4,150 tons.

BALTIMORE STORAGE & LIGHTERAGE CO.

236 La Salle Street, } and 10 Fenchurch Street,

Chicago, Ill. } London.

409 Second Street, Baltimore, Md.

ATLANTIC TRANSPORT LINE,

BETWEEN BALTIMORE AND LONDON

Calling at Swansea and Philadelphia on the outward

passage.

S.S. Minnesota, 5,000 tons. S.S. Missouri, 4,000 tons.

S.S. Maryland, 4,000 tons. S.S. Michigan, (Bldg.)

S.S. Montana, 4,000 tons. S.S. Mississippi, (Bldg.)

S.S. Maine, 4,150 tons.

BALTIMORE STORAGE & LIGHTERAGE CO.

236 La Salle Street, } and 10 Fenchurch Street,

Chicago, Ill. } London.

409 Second Street, Baltimore, Md.

ATLANTIC TRANSPORT LINE,

BETWEEN BALTIMORE AND LONDON

Calling at Swansea and Philadelphia on the outward

passage.

S.S. Minnesota, 5,000 tons. S.S. Missouri, 4,000 tons.

S.S. Maryland, 4,000 tons. S.S. Michigan, (Bldg.)

S.S. Montana, 4,000 tons. S.S. Mississippi, (Bldg.)

S.S. Maine, 4,150 tons.

BALTIMORE STORAGE & LIGHTERAGE CO.

236 La Salle Street, } and 10 Fenchurch Street,

Chicago, Ill. } London.

409 Second Street, Baltimore, Md.

ATLANTIC TRANSPORT LINE,

BETWEEN BALTIMORE AND LONDON

Calling at Swansea and Philadelphia on the outward

passage.

S.S. Minnesota, 5,000 tons. S.S. Missouri, 4,000 tons.

S.S. Maryland, 4,000 tons. S.S. Michigan, (Bldg.)

S.S. Montana, 4,000 tons. S.S. Mississippi, (Bldg.)

S.S. Maine, 4,150 tons.

BALTIMORE STORAGE & LIGHTERAGE CO.

236 La Salle Street, } and 10 Fenchurch Street,

Chicago, Ill. } London.

409 Second Street, Baltimore, Md.

ATLANTIC TRANSPORT LINE,

BETWEEN BALTIMORE AND LONDON

Calling at Swansea and Philadelphia on the outward

passage.

S.S. Minnesota, 5,000 tons. S.S. Missouri, 4,000 tons.

S.S. Maryland, 4,000 tons. S.S. Michigan, (Bldg.)

S.S. Montana, 4,000 tons. S.S. Mississippi, (Bldg.)

S.S. Maine, 4,150 tons.

BALTIMORE STORAGE & LIGHTERAGE CO.

236 La Salle Street, } and 10 Fenchurch Street,

Chicago, Ill. } London.

409 Second Street, Baltimore, Md.

ATLANTIC TRANSPORT LINE,

BETWEEN BALTIMORE AND LONDON

Calling at Swansea and Philadelphia on the outward

passage.

S.S. Minnesota, 5,000 tons. S.S. Missouri, 4,000 tons.

S.S. Maryland, 4,000 tons. S.S. Michigan, (Bldg.)

S.S. Montana, 4,000 tons. S.S. Mississippi, (Bldg.)

S.S. Maine, 4,150 tons.

BALTIMORE STORAGE & LIGHTERAGE CO.

236 La Salle Street, } and 10 Fenchurch Street,

Chicago, Ill. } London.

409 Second Street, Baltimore, Md.

ATLANTIC TRANSPORT LINE,

BETWEEN BALTIMORE AND LONDON

Calling at Swansea and Philadelphia on the outward

passage.

S.S. Minnesota, 5,000 tons. S.S. Missouri, 4,000 tons.

S.S. Maryland, 4,000 tons. S.S. Michigan, (Bldg.)

S.S. Montana, 4,000 tons. S.S. Mississippi, (Bldg.)

S.S. Maine, 4,150 tons.

BALTIMORE STORAGE & LIGHTERAGE CO.

236 La Salle Street, } and 10 Fenchurch Street,

Chicago, Ill. } London.

409 Second Street, Baltimore, Md.

ATLANTIC TRANSPORT LINE,

BETWEEN BALTIMORE AND LONDON

Calling at Swansea and Philadelphia on the outward

passage.

S.S. Minnesota, 5,000 tons. S.S. Missouri, 4,000 tons.

S.S. Maryland, 4,000 tons. S.S. Michigan, (Bldg.)

S.S. Montana, 4,000 tons. S.S. Mississippi, (Bldg.)

S.S. Maine, 4,150 tons.

BALTIMORE STORAGE & LIGHTERAGE CO.

236 La Salle Street, } and 10 Fenchurch Street,

Chicago, Ill. } London.

409 Second Street, Baltimore, Md.

ATLANTIC TRANSPORT LINE,

BETWEEN BALTIMORE AND LONDON

Calling at Swansea and Philadelphia on the outward

passage.

S.S. Minnesota, 5,000 tons. S.S. Missouri, 4,000 tons.

S.S. Maryland, 4,000 tons. S.S. Michigan, (Bldg.)

S.S. Montana, 4,000 tons. S.S. Mississippi, (Bldg.)

S.S. Maine, 4,150 tons.

BALTIMORE STORAGE & LIGHTERAGE CO.

236 La Salle Street, } and 10 Fenchurch Street,

Chicago, Ill. } London.

409 Second Street, Baltimore, Md.

ATLANTIC TRANSPORT LINE,

BETWEEN BALTIMORE AND LONDON

Calling at Swansea and Philadelphia on the outward

passage.

S.S. Minnesota, 5,000 tons. S.S. Missouri, 4,000 tons.

S.S. Maryland, 4,000 tons. S.S. Michigan, (Bldg.)

S.S. Montana, 4,000 tons. S.S. Mississippi, (Bldg.)

S.S. Maine, 4,150 tons.

BALTIMORE STORAGE & LIGHTERAGE CO.

236 La Salle Street, } and 10 Fenchurch Street,

Chicago, Ill. } London.

409 Second Street, Baltimore, Md.

ATLANTIC TRANSPORT LINE,

BETWEEN BALTIMORE AND LONDON

Calling at Swansea and Philadelphia on the outward

passage.

S.S. Minnesota, 5,000 tons. S.S. Missouri, 4,000 tons.

S.S. Maryland, 4,000 tons. S.S. Michigan, (Bldg.)

S.S. Montana, 4,000 tons. S.S. Mississippi, (Bldg.)

S.S. Maine, 4,150 tons.

BALTIMORE STORAGE & LIGHTERAGE CO.

236 La Salle Street, } and 10 Fenchurch Street,

Chicago, Ill. } London.

409 Second Street, Baltimore, Md.

ATLANTIC TRANSPORT LINE,

BETWEEN BALTIMORE AND LONDON

Calling at Swansea and Philadelphia on the outward

passage.

S.S. Minnesota, 5,000 tons. S.S. Missouri, 4,000 tons.

S.S. Maryland, 4,000 tons. S.S. Michigan, (Bldg.)

S.S. Montana, 4,000 tons. S.S. Mississippi, (Bldg.)

S.S. Maine, 4,150 tons.

BALTIMORE STORAGE & LIGHTERAGE CO.

236 La Salle Street, } and 10 Fenchurch Street,

Chicago, Ill. } London.

409 Second Street, Baltimore, Md.

ATLANTIC TRANSPORT LINE,

BETWEEN BALTIMORE AND LONDON

Calling at Swansea and Philadelphia on the outward

passage.

S.S. Minnesota, 5,000 tons. S.S. Missouri, 4,000 tons.

S.S. Maryland, 4,000 tons. S.S. Michigan, (Bldg.)

S.S. Montana, 4,000 tons. S.S. Mississippi, (Bldg.)

S.S. Maine, 4,150 tons.

BALTIMORE STORAGE & LIGHTERAGE CO.

236 La Salle Street, } and 10 Fenchurch Street,

Chicago, Ill. } London.

409 Second Street, Baltimore, Md.

ATLANTIC TRANSPORT LINE,

BETWEEN BALTIMORE AND LONDON

Calling at Swansea and Philadelphia on the outward

passage.

S.S. Minnesota, 5,000 tons. S.S. Missouri, 4,000 tons.

S.S. Maryland, 4,000 tons. S.S. Michigan, (

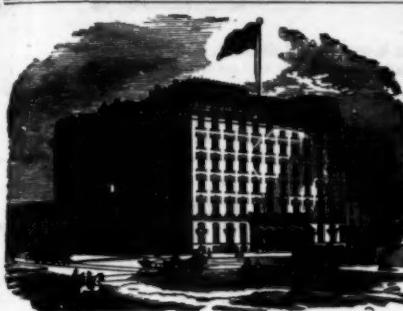
THE STILLMAN

CLEVELAND, OHIO.

Unsurpassed in its Elegance, Fine Cuisine and Table Service.

Only Fire-Proof Hotel in Cleveland.
Every room heated by Steam and lighted by Electric Light.RATES \$3.50 TO \$5.00 PER DAY.
Elegant suites can be secured by addressing

J. WARREN COLEMAN, Jr., Manager

**Colonnade Hotel,**

Chestnut St., Cor. 15th,

One block from new Penn. Railroad Depot

PHILADELPHIA.

H. J. & G. R. CRUMP.

A FAVORITE RESORT
FOR ALL
SOUTHERN TRAVEL.

SOUTHERN PEOPLE, TOURISTS, TRAVELERS & BUSINESS MEN

SHOULD STOP AT

THE Beautiful and Elegant

* "NIAGARA" HOTEL,

BUFFALO, N. Y.

Front and Porter Ave.

The Most Elegant Hotel in America. Situated commanding a beautiful view of Lake Erie and Niagara River. Spacious conservatory filled with rare exotic. Special rates made for parties remaining one week or longer. Hotel particularly well located for business men and their families. LATE DINNERS. MUSIC.

RATES—\$4.00 a day and upwards (American Plan.)

Telegraph for accommodations in advance at our expense.

HENRY F. ROESSER, Manager.

PIEDMONT AIR LINE.**RICHMOND & DANVILLE R.R. CO.**

THE SHORT AND DIRECT LINE FROM

Washington, D. C., and Richmond, Va.,

To Atlanta, Augusta, Columbia, Asheville, Raleigh, Greensboro, Salisbury, Goldsboro, Birmingham, Montgomery, Vicksburg, Shreveport, Mobile, New Orleans, Texas, Mexico and California, and the South and Southwest.

DOUBLE DAILY, SOLID TRAINS between Washington and Atlanta. Pullman's Palace Buffet and Drawing-Room Sleeping Cars without change to Atlanta, New Orleans, Augusta, etc.

For maps, time-tables, rates of passage, freight, etc., apply to nearest Station Agent of the Piedmont Air Line, or to any Railroad Agent of principal lines North or South.

PEYTON RANDOLPH, General Manager.

JAS. L. TAYLOR, Gen. Pass. Agent.

EAST TENNESSEE,
VIRGINIA,
GEORGIA,
FL.

IS THE SHORT LINE

EAST and WEST, NORTH and SOUTH.

Daily Sleeping Car Service between

WASHINGTON and MEMPHIS, WASHINGTON and NEW ORLEANS,
and Double Daily Service between

CINCINNATI and JACKSONVILLE.

THE SHORTEST ROUTE,

THE CHEAPEST ROUTE,

THE QUICKEST ROUTE.

THE BEST ROUTE.

B. W. WRENN, Gen'l Passenger and Ticket Agent, Knoxville, Tenn.
C. A. BENSCOTER, A. G. P. A., Knoxville.
C. A. DESAUSSURE, A. G. P. A., Memphis.

S. H. HARDWICK, A. G. P. A., Atlanta.

RAY KNIGHT, A. G. P. A., Selma.

Western Maryland R. R.

Short Freight Line to Westminster, Frederick, Taneytown and Hagerstown, Md.; Waynesboro, Chambersburg, Shippensburg, Hanover, Gettysburg and Carlisle, Pa.; also points on the Frederick Division P. R. R., Gettysburg & Harrisburg R. R., Harrisburg & Potomac R. R., Shenandoah Valley R. R., Norfolk & Western R. R. and connections, also route of

Great Southern Despatch.

All rail Fast Freight Line for Southern and Southwestern points, via. Bristol, Tenn. Freight received in any quantity at Hillen Station, and in car loads at Fulton, Canton and Jackson's wharf. Shippers desiring information will be called on. Send postal card with address to

R. H. CRISWOLD,
G. P. A., Hillen Station, Baltimore, Md.EMPLOYERS WILL PREVENT LOSS
BY ACCIDENTS TO
WORKMEN BY INSURING WITH**Employers' Liability Assurance Corporation.**Agent, G. W. S. HALL, Baltimore, Md.
Firms with pay rolls of over Sixty Million Dollars now protected**PREMIER FLOUR**

OF AMERICA.

Patapsco Flouring Mills.
ESTABLISHED 1774.**OUR PATENT ROLLER FLOURS**

Are manufactured from the Choicest Wheat Obtainable, for which Baltimore as a market stands pre-eminent. Their superiority for Uniformity, Strength and Unapproachable Flavor has long been acknowledged. Our Patapsco Superlative Patent Stands Unrivaled. Of a rich creamy color, it makes a bread that will suit the most fastidious.

ASK YOUR GROCER FOR

PATAPSICO SUPERLATIVE PATENT, PATAPSICO FAMILY PATENT, ORANGE GROVE EXTRA, ROLANDO CHOICE PATENT.

C. A. GAMBRILL MFG. CO.
Office, 214 Commerce Street, Baltimore, Md.**Lake Chautauqua Route**

FROM THE

South and West to the East

Pullman Line to all points on Lake Chautauqua and to New York. Ask for tickets via
ERIE RAILWAY.Descriptive pamphlets mailed free on application.
R. B. THOMAS, Second Vice-President.
L. P. FARMER, General Passenger Agent.
W. C. RINEARSON, Ass't Gen. Pass. Agt.
CLEVELAND, OHIO.**John Ryan Co.**

South and German Sts., BALTIMORE.

LIBERAL TERMS.

TYPE FOUNDING and ELECTROTYPING.

Printing Presses New and Second-Hand.

Printers' Materials.

PROMPT, ACCURATE and RELIABLE.

HULT & WIBORG
PRINTING INKS.
CINCINNATI.
A&W INK USED ON THIS PUBLICATION

BRANCH OFFICE,

152 and 154 Monroe Street, Chicago.

TRADE NOTES.

PUMPS AND HYDRAULIC MACHINERY.—The Silver & Deming Manufacturing Co., Salem, O., issue an illustrated wall card descriptive of their various forms of pumps. A complete descriptive catalogue is mailed to dealers upon application.

If you want a good, reliable weekly paper from Louisiana, send one dollar to Bienville New Era, Gibsland, La., and get it one year. Or if you want a Louisiana home or a good location for foundry or factory, address its editor, Thos. J. Mangham, Gibsland, La.

A TRIUMPH AT PARIS.—The Stilwell & Bierce Manufacturing Co., milling and hydraulic engineers, of Dayton, O., were awarded the grand gold medal at the recent Paris Exposition for their celebrated Victor turbine. They report their foreign sales widely extending.

AMONG recent letters received by the Case Manufacturing Co., Columbus, Ohio, reporting satisfaction with their machinery, is the following:

W. C. MANSFIELD & CO.,
Merchant Millers.

CLEVELAND, TENN., Aug. 29, 1889.
Case Manufacturing Co., Columbus, O.:

Gentlemen—If we were to build a hundred mills, we would not permit any other than the "Case Roll" to enter them. They are the best roll on earth. Yours truly,

W. C. MANSFIELD & CO.

THE Staunton & West Augusta Railroad Co. has, it is stated, let the contract for the construction and equipment of their road to the New York Mining & Construction Co., of which Mr. C. G. Dyott, of 52 Wall street, New York, is president. The road is to be some 250 miles long, all in Virginia and West Virginia. The construction company named owns a large tract of land in Virginia containing valuable deposits of coal, lime and iron suitable for Bessemer steel. The ore is very "free," and yields a high percentage of iron. It is proposed to push both these enterprises rapidly forward. Work will begin at once.

MILLING MACHINERY AND APPLIANCES. Chase & Son, mechanical and hydraulic engineers, 234-236 Federal street, Portland, Me., manufacture and supply a varied stock of the best machinery and appliances for milling purposes, including grinding, crushing, sawing and planing machinery, including water wheels, boilers, engines and millmen's supplies. They issue a full descriptive catalogue, which will be mailed on application. In their plants Corliss automatic engines are employed as being the most economical for the work to be done. The catalogue is filled with elegant photographs and photo-gravures of the apparatus which the company supply, with descriptive letter-press and a strong array of fac-simile testimonials from patrons throughout the country.

AN honor has just been conferred upon a prominent citizen of Cincinnati which is calculated to make any man very proud. Mr. W. H. Doane, president of J. A. Fay & Co., has been decorated with the ribbon of the Legion of Honor. He is among the few Americans who have received this distinction. J. A. Fay & Co. have in the Exposition an exhibit of wood-working machinery which has attracted more attention than almost any other exhibit in the machinery department. The display is in a prominent place and is constantly a center of attraction. At the distribution of prizes this exhibit, brought into comparison, as it is, with the most ingenious machinery of all countries, has yet received the grand prize. And now comes this additional honor as a deserved tribute to the inge-

nuity and excellence of American machinery. Mr. Doane felt confident that the grand prize would be awarded to his machinery. But the ribbon of the Legion of Honor comes as an unexpected and most welcome surprise. Mr. Doane is very much delighted; for while many prizes of various grades have been awarded to American exhibitors, but few have received this especial and most honorable distinction. It is another case of Ohio to the front.—Cable to Cincinnati Commercial Gazette.

DR. H. G. TORRY, a well-known scientist, has sent the following letter to the Magnolia Anti-friction Metal Co., New York, N. Y.:

"At your request I have made several friction tests of journal bearing metals. Those selected were your own Magnolia metal, taken from the stock as made day by day, and Hoyt's genuine babbitt, and the deoxidized genuine babbitt, the latter two supposed to be the best of their class. The machine used was a 5-inch shaft keyed on a 3-inch shaft, lubricated with sperm oil, 5-inch shaft running in the oil. With light pressures and slow revolutions of shaft the metals showed little difference, but with rapid revolutions and heavy pressures Magnolia metal showed great superiority."

A test of these metals for one hour was made, and from the detailed statement given we take the following summary: "Magnolia ran full time free without melting out or stopping machinery. Hoyt's melted and stuck to shaft at end of 45 minutes. Deoxidized genuine babbitt melted and stuck to shaft at end of 55 minutes."

MR. H. W. CALDWELL, manufacturer of the Caldwell conveyor, Chicago, Ill., in a letter to the MANUFACTURERS' RECORD says: "During the season just closed we have furnished some 75 cotton-seed oil-mills in the South with Caldwell conveyor, buckets, bolts, belting, shafting, pulleys, elevator boots, perforated metal, sprocket wheels, gearing and drive chain. We have some very flattering comments on our new buckets, the Caldwell patent corrugated, from such worthy and influential sources as Mr. John Oliver, president and treasurer of the Gate City Oil Co., Atlanta, Ga., who says: 'Think this elevator cup is exactly what is needed, as it certainly has far greater strength than any other cup we have seen.' The Savannah Steam Rice Mill Co., Savannah, Ga., say: 'We are so well pleased with the buckets sent us that we enclose order for more.' Mr. J. H. Thomas, superintendent of several mills, says: 'I would use no other.' E. W. Thompson, chief engineer Southern Cotton Oil Co., says: 'We have started the elevator; in fact, have been running it several weeks, and it is the nicest thing I ever saw. The new cups that you sent for it are absolutely perfect, and I will never use any other.' This is the largest elevator of the kind in the United States, having belt 30 inches wide and two 14x6½-inch buckets, put together lengthwise on this belt. Certificates from such high order of intelligent judges seldom fall to any article, in the course of business, unsolicited. Your paper has been a valuable adjunct in our season's trade."

WM. SIMPKIN, A. S. M. E. **SIMPKIN & HILLYER,** E. C. HILLYER, M. E.
ENGINEERS and CONTRACTORS RICHMOND, VA.

Manufacturers of and Agents for Steam Engines, Boilers, Pumps and Heavy Machinery. Economical Steam Plants, Rope and Belt Driving. Special Machinery for Chemical and Fertilizing Works, Gas, Water and Creosote Works. A specialty of the "Warwick" Pole Road Locomotive, "Warwick" Tram Road Locomotive, and the "Warwick" Silent Steam Street Motor. Castings furnished. Repair work solicited. Consultations, Arbitrations and Valuations. Engines indicated. Plans, Specifications and Estimates prepared. Correspondence invited.

WORKS—Newport News, Va.

HARRISON SAFETY BOILERS. All sizes from 4 H. P. to 240 H. P.
 Merits Proven by Over Twenty Years' Practical Work.
 Combine Maximum Safety, Economy of Fuel, Durability.
 Ease of Transportation, Erection and Repair. Full Particulars, Drawings and Estimates mailed upon application.

HARRISON SAFETY BOILER WORKS, Germantown Junction, Philadelphia, Pa.
 Southern Office, 9 to 18 N. Pryor street, Atlanta, Ga.

The Corey Grate Bar.

This grate consists of single bars $\frac{1}{4}$ thick at top and $\frac{1}{8}$ at bottom, sides being concaved, and gives $\frac{1}{2}$ inch air space, with only $\frac{1}{8}$ iron to hold the heat. Bars are mounted on vibrating bearings, insuring by its operation a clean fire and economy of coal.

— Manufactured by —

Phenix Iron Foundry, Providence, R. I.

The Wenstrom Dynamo.**INCANDESCENT AND ARC LIGHTING.**

For Residences, Factories and Central Stations. Absolutely Safe. No Danger to Life or Property. Simple, Compact and Durable.

We guarantee that it will give 25 per cent. more light per horse-power, whilst the speed required is only about one-half of that of any other system. It is economical in price and is the only Dynamo manufactured in the South. We also manufacture

MOTORS from 5 to 50 Horse-Power,

and our Dynamos and Motors require no experienced labor to operate. All parties contemplating putting in Electric Plants would do well to correspond with us.

AGENTS WANTED FOR UNOCCUPIED TERRITORY.

The Wenstrom Southern Electric Mfg. Co.

OFFICE 6 SOUTH STREET,

FACTORY LOCUST POINT,

BALTIMORE, MD.

C. H. FULLAWAY, Pres't. H. W. STEVENSON, Vice-Pres't.

A. L. MAGILTON, Treas.

THE COMMONWEALTH CONSTRUCTION CO., Contracting Engineers,
 P. O. BOX 184, PHILADELPHIA, PA.

Water Works, Gas Works, Electric-Light Plants and Sewerage Constructed in all parts of the United States. We offer special inducements to Cities, Boroughs and Towns. Special attention given to the remodeling of Water Works, &c., &c.

PLANS, ESTIMATES AND SPECIFICATIONS FURNISHED. T. S. MIDDLETON, Engineer.

LEWIS J. MILLER,
 Philadelphia, Pa.

MILLER & BIERCE,

WILL W. BIERCE,
 Memphis, Tenn.

Engineers and Contractors

Lewis Miller's Improved Steam and Hydraulic Cotton Compress,
 (Lewis Miller's and John F. Taylor's Patents.)

The most powerful, economical, and the fastest working Compress built. The only Compress in the world that will load cars and vessels to their full tonnage.

Also Agents and Manufacturers of Steam Engines, Water Engines, Pumps, Boilers, and Heavy Machinery in General.

OFFICES:

PHILADELPHIA, PA., 16 S. Broad Street.

MEMPHIS, TENN., 327 2d Street.

—

GENERAL OFFICE—1105 Main St., Richmond, Va.
 SEND ALL REPAIRS TO OUR WORKS.

Stilwell's Patent HEATER AND FILTER

Lime
Extracting

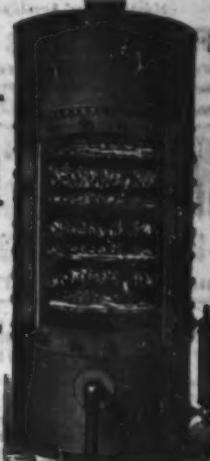
The Only Lime Extracting Heater That Will Prevent Scale in Steam Boilers.

Removing all impurities from the water before it enters the boiler.

Thoroughly Tested

Over 3,000 of Them in Daily Use.

This cut is a facsimile of the appearance of a No. 5 Heater at work on ordinary lime water, when the door was removed after the Heater had been running two weeks. [Illustrated Catalogue Free.



STILWELL & BIERCE MFG. CO., DAYTON, O.

Standard Oil Fuel Burner Company



[SECTION OF PLANT OF FIFTY FIRES PUT IN FOR THE LAMSON & SESSIONS CO., CLEVELAND, OHIO.]

This Burner is particularly adapted to the heavy work done by axe and scythe makers, large drop forging, etc., as well as the innumerable lighter manufactures.

We have in actual use fires from 6 x 8 inches for sure work, up to 5 x 24 feet for heating Blooms, where we heat 60 gross tons per day.

In fact it can be applied to any purpose where heat is required, obtained from coal or gas. We save in fuel, labor, time, quality of work, health of operatives, cleanliness; also in the durability of belting, which is rapidly destroyed by the fumes of gas produced by anthracite coal.

We have at this office a number of testimonials from large concerns, setting forth the merits as claimed, which are open to inspection, or a circular will be furnished on application. For further information apply at the offices of the company, 137 Broadway.

Offices, 137 Broadway, New York. *

* Factory, Fort Plain, New York.

THE SYSTEM adopted by this company for the use of Crude Petroleum as fuel is both simple, economical and effective. Perfect combustion, uniform heat, regulated as easily as an ordinary lamp. Although comparatively new, being only introduced in April of this year, the number of fires using it AMOUNT TO NEAR ONE THOUSAND, WHICH IS PROBABLY MORE THAN ALL THE OTHER DEVICES FOR THIS PURPOSE COMBINED.

This company has yet to meet with the first failure in its appliance. The company is ready to put up any number of fires on trial, and to remove the same free of all expense should it fail to do what is represented.

We use the ordinary blast blower (found in most every establishment) that will give 5 to 6 oz pressure. Steam or compressed air dispensed with.

This Method is well adapted for Desulphurizing Ores and other Mining Purposes.

OFFICE OF LAKE ERIE IRON CO.,
101 CLAIR STREET, CLEVELAND, O., June 28th, 1889,

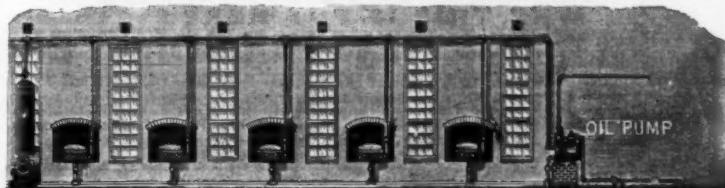
Gentlemen: In reply to your request for a testimonial as to the merits of your burners, we beg to state that when you first proposed to put your burners in our works we were rather doubtful as to the real nature of all you claimed. After a trial of three burners we increased the number to twenty-three, and have added twelve more, and in the near future will use no other means of combustion.

We save sixty-five per cent in fuel, fifty in labor and twenty-five in time, hearers producing a better article; and in health and comfort to operators it is beyond comparison.

Yours very truly,

LAKE ERIE IRON CO., G. W. SCOFIELD, Pres.

THE AERATED FUEL COMPANY,
425 MAIN STREET, SPRINGFIELD, MASS. J. H. BULLARD, Manager.
FORGING AND WELDING BY PETROLEUM AIR BLAST
THE ONLY RIVAL OF NATURAL GAS! ECONOMY OVER COAL!



This Cut shows our System in Actual Operation in a Nut and Bolt Works where the output is about 40 Tons Daily. CONTINUOUS FIRES ALL DAY. NO SMOKE, DIRT, OR ASHES.

ALDEN SPEARE'S SONS & CO., 3 Central Wharf, Boston. W. S. COLLINS, 171 Broadway, New York. WILLIAM PICKETT, SON & CO., 170 Lake Street, Chicago, Agents.

THE ONLY SYSTEM WHERE ALL OIL IS BELOW THE BURNERS!

We will replace any Insurance canceled on account of its use when put in according to our plans without extra cost to the insured.

A New Gas for Light and Fuel.

THE BROOKS GAS PROCESS

in practical operation converts crude petroleum into a fixed or non condensable gas for illumination or fuel. The attention of gas companies is called to this process, as by its adoption they will be able to produce a light of equal brilliancy to that of the electric light, and at less cost than by any other process. Manufacturers will find this the fuel with which to compete with natural gas.

ILLUMINATING & FUEL GAS COMPANY,

920 to 925 Drexel Building, Philadelphia, Pa.

W. A. LEAVITT,

HENRY W. BROOKS,

SAMUEL B. HUEY,

Prest. and Gen. Mgr.

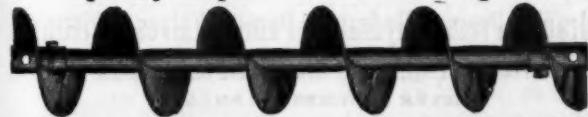
Vice-Prest. and Gen. Sup't.

General Counsel.

The Caldwell Patent Spiral Steel Conveyor

MADE OF STEEL, DOUBLE BOLTED, DOUBLE COLLARED AND EXTRA STRONG COUPLINGS.

Specially Adapted to use in Handling Cotton Seed and all its Products, Fertilizers and Phosphates.



Mill and Grain Elevator Supplies.

H. W. CALDWELL.

181 and 188 West Washington Street,
CHICAGO, ILLINOIS.

EMPLOYERS WILL PREVENT LOSS
BY ACCIDENTS TO
WORKMEN BY INSURING WITH

Employers' Liability Assurance Corporation.

Agent, G. W. S. HALL, Baltimore
Firms with poly rolls over Sixty Million Dollars now protected

CAVE RY
CO RRUGATED
BUCKE T
PA TE NT ED
THE CALDWELL PATENT.

HARALSON & MURRAY,
Manufacturers' Agents and Dealers in
Pumps, Engines & Boilers,
Wood and Iron Working Machinery, and General Machinists, Mill and Plumbers' Supplies.
Write for Prices.
FLORENCE, ALA.

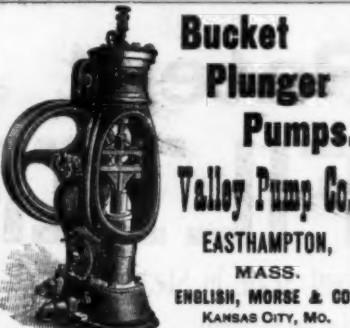
WELL DRILLING
MACHINERY & TOOLS
ST. LOUIS VISE & WELL TOOL CO.,
Catalogue Free: ST. LOUIS, MO.

THE ORIGINAL IMPROVED Baldwinsville Centrifugal Pump.

Sent on trial for thirty days to responsible parties. Our patterns are new and of the best design. Our shop has been fitted up with new tools and appliances of the best manufacture. Being practical machinists for the past twenty-five years, we feel confident we can give the best satisfaction, and therefore we guarantee our work as to prices and quality in every respect. More in use than any other make. Correspondence solicited.

Address
BOGGS & CLARKE
185 and 186 S. Clinton St.,
SYRACUSE, N. Y.

D. H. MATSON, Pres.



Bucket Plunger Pumps.

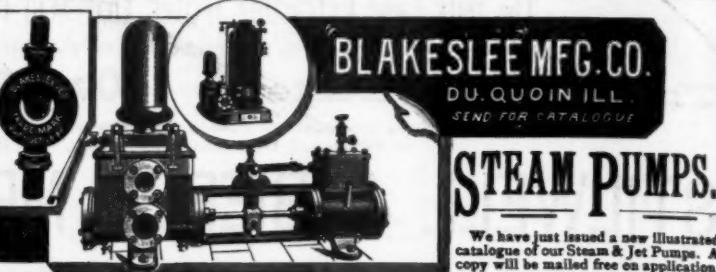
Valley Pump Co.
EASTHAMPTON,
MASS.
ENGLISH, MORSE & CO.
KANSAS CITY, MO.

DEAN BROS. STEAM PUMP WORKS.



SEND FOR CATALOGUE AND PRICES.

INDIANAPOLIS, IND.



BLAKESLEE MFG. CO.

DU QUOIN ILL.

SEND FOR CATALOGUE

STEAM PUMPS.

We have just issued a new illustrated catalogue of our Steam & Jet Pumps. A copy will be mailed free on application.



THE LAIDLAW & DUNN CO.

STANDARD DUPLEX PUMP AND BOILER FEEDER COMB. LINES.
STANDARD COMPOUND STEAM PUMP.
STANDARD DUPLEX STEAM PUMP.
HERO BOILER FEEDER

PUMPS OF EVERY DESCRIPTION. CINCINNATI, O. SEND FOR CIRCULAR.

The Buffalo Steam Pump Co.

MANUFACTURERS OF



Steam Pumps

FOR ALL DUTIES.

BUFFALO, N. Y.

GEO. F. BLAKE MFG. CO.

BUILDERS OF STEAM AND POWER



111 Federal Street, Boston.

95 and 97 Liberty St., N. Y., 535 Arch St., Philadelphia.

WHY THIS IS PUT HERE!

NEW PULSOMETER,

THE CHEAPEST AND BEST STEAM PUMP IN THE MARKET. PRICES LOWER THAN ANY OTHER.

More Efficient, Simple, Durable, and more Economical, both as to running expenses and repairs, than any other Steam Pump.

For Mining, Railroad or Steamboat use, Paper Mill, Chemical or Gas Works, Tannery,

Brewery or Sugar Refineries, Draining Quarries, Cellars or

Plantations, Irrigating or Hydraulic Mills.

Call or write for our new 32 page Illustrated Descriptive Book containing Full Particulars, Reduced Net Prices, and hundreds of A-1 Testimonials. Mailed Free.

Pulsometer Steam Pump Co., 120 Liberty St., N. Y.

PUMPS

THE JOHN H. McCOWAN CO.

42, 44, 46 Central Ave., CINCINNATI, O. Branch House, 1425 E. Main St., RICHMOND, VA.

HYDRAULIC JACKS.

BEST IMPROVEMENTS. MOST STYLES.

Hydraulic Presses, Hydraulic Pumps, Valves & Fittings,

Vreeland's Transfer Jacks, Hydraulic and Screw Punches,

LEVER PUNCHES and SHEARS.

WATSON & STILLMAN

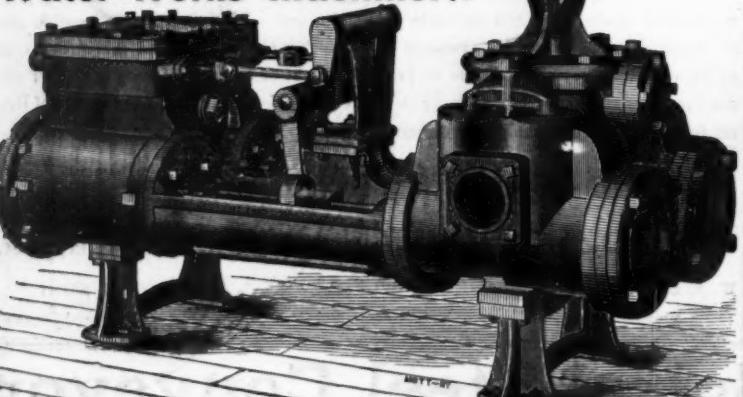
210 E. 48th Street, NEW YORK.

THE IMPROVED **SMITH & VAILE**
Single, Duplex and Compound

STEAM PUMPS

FOR EVERY DUTY.

Water-Works Machinery.



13½ in. Steam Cylinder, 20-in. Water Cylinder and 24 in. stroke Improved Low-Service Pump.

The Smith & Vaile Co.

—*—DAYTON, O. and NEW YORK.—*—
112 LIBERTY STREET.

Plans and Estimates for Hydraulic and Oil Mill Machinery on Application.

EASTERN & SOUTHERN AGENTS:

THOS. K. CAREY & BROS., 26 Light Street, Baltimore, Md.
G. W. STORER, 149 N. 3d Street, Philadelphia, Pa.
D. A. TOMPKINS CO. — Charlotte, N. C., and Atlanta, Ga.



PUMPS FOR
BOILER-FEEDING,
MINES,
REFINERIES,
BREWERIES,
TANNERY,
IRRIGATING,
FIRE PURPOSES,
RAILROADS and
FILLING TANKS,
CRANK and
FLY WHEEL
And VACUUM
PUMPS.

Foot of East 23d Street,

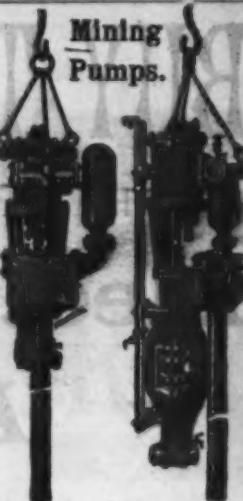
SEND FOR
Illustrated Catalogue A.



SIMPLE,
COMPACT,
DURABLE,
EFFICIENT.

ADAPTED TO
ALL PURPOSES.

NO OUTSIDE
VALVE GEAR.



Mining
Pumps.

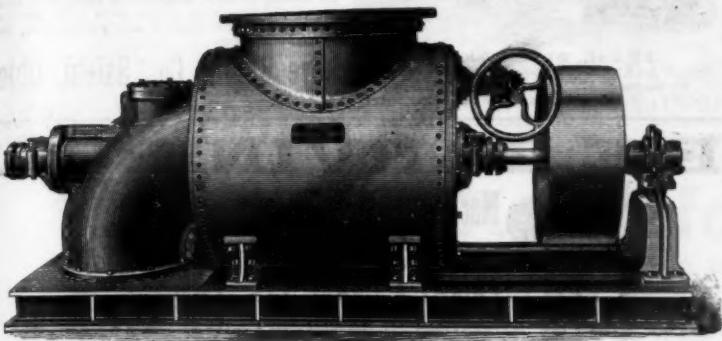
The A. S. Cameron Steam Pump Works,

NEW YORK.

Piston Pattern.

Plunger Pattern.

New American Turbine.



THE above engraving represents a single 16-inch NEW AMERICAN TURBINE, placed in a horizontal flume mounted on an iron bed. We are prepared to furnish two wheels in a flume of the same construction from 6-inch to 54-inch diameter, also vertical wheels from 6-inch to 66 inches. These wheels are admirably adapted to drive any kind of Machinery where steadiness of motion is required. For descriptive catalogues, address

STOUT, MILLS & TEMPLE, Dayton, Ohio.

H. E. MCWANE, President and General Manager.

W. D. CAMPBELL, Secretary and Treasurer.

**THE GLAMORGAN COMPANY, Proprietors of
HILL CITY PIPE WORKS**



Manufacture all kinds of Blast Furnace, Coking and Mining Machinery; Boilers, Engines, Tramway and Construction Car Castings, and Tobacco Machinery, &c.
Prices on application.

LYNCHBURG, VA.

OHATTANOOGA FOUNDRY & PIPE WORKS.

DAVID GILES, Pres. C. B. IBESTER, Vice-Pres. M. LLKELLYN, Secy. and Treas.
Successors to B. GILES & CO., Chattanooga, Tenn., Manufacturers of

Also Castings and Patterns of Every Description made to order.

The Addyston Pipe & Steel Co.

CINCINNATI, OHIO.

PROPRIETORS OF THE BUSINESS AND WORKS FORMERLY OPERATED BY
THE CINCINNATI AND NEWPORT IRON AND PIPE COMPANY.

MATTHEW ADDY,
President.
Geo. P. WILSHER,
Vice-President.
Dwight KIRKBY,
Sec. and Treas.
W. L. DAVIS,
Contracting Agt.
J. K. DIMMICK,
Gen. Supt.

For WATER, GAS, Railroad and Turnpike CULVERTS and SEWERS.
BRANCH CASTINGS OF ALL DESCRIPTIONS.

HYDRAULIC CYLINDERS. MACHINE CASTINGS and FLANGE PIPE.



At Last! A very Simple and Cheap System of Lithography!
Without Stone or Press. Eas'y Worked by a Boy.

The Black Autocopyst

Furnishes Excellent Copies in Permanent Black and Solid Lines of anything written or drawn with any pen using our Special Fluid Ink. Energetic Men Wanted for State Agents.

M. A. BYRNES, 166 William Street, New York.



IRRIGATION NEW ERA GRADER AND DITCHER

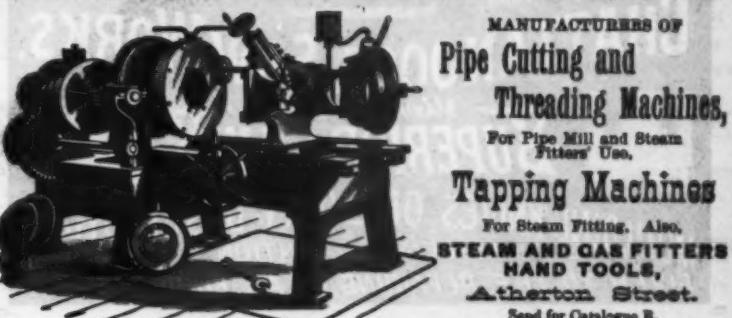
Will elevate and place in embankment 1000 Cubic Yards of earth in 10 hours, at a cost not exceeding TWO CENTS per cubic yard. Hundreds now in use. Write for circulars.

**F. C. AUSTIN MFG. CO.,
Carpenter St. and Carroll Ave., CHICAGO, ILL.**

We are the largest manufacturers of

Artesian, Well, Machinery
In the world.

D. SAUNDERS' SONS



MANUFACTURERS OF

Pipe Cutting and
Threading Machines,

For Pipe Mill and Steam
Fitters' Use.

Tapping Machines

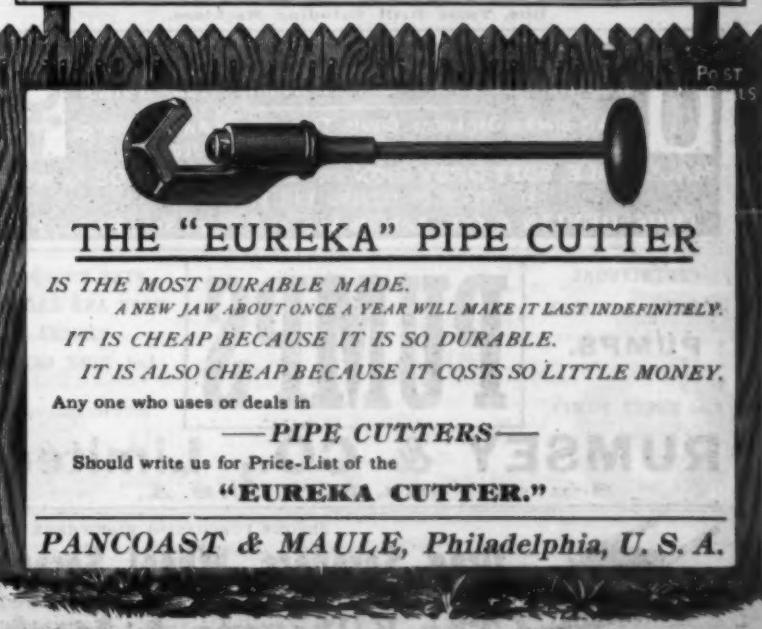
For Steam Fitting. Also,

STEAM AND GAS FITTERS
HAND TOOLS,
Atherton Street.

Send for Catalogue B.

TONKINS, IN. T.

THE EXCLUSIVE USE OF THIS FENCE FOR ADVERTISING PURPOSES HAS BEEN SOLD TO PANCOAST & MAULE, PHILADELPHIA, PA.
ANY ONE CAUGHT DEFACING THIS SIGN WILL BE PROSECUTED.



THE "EUREKA" PIPE CUTTER

IS THE MOST DURABLE MADE.

A NEW JAW ABOUT ONCE A YEAR WILL MAKE IT LAST INDEFINITELY.

IT IS CHEAP BECAUSE IT IS SO DURABLE.

IT IS ALSO CHEAP BECAUSE IT COSTS SO LITTLE MONEY.

Any one who uses or deals in

PIPE CUTTERS

Should write us for Price-List of the

"EUREKA CUTTER."

PANCOAST & MAULE, Philadelphia, U. S. A.

BUY THE BRUSH

Then you will have the best of all

Electric ★

★ **Apparatus**

Write immediately for a catalogue regarding

**Arc and Incandescence,
BRUSH LIGHTS AND MOTORS.**

The Brush Electric Co.

CLEVELAND, O.

CHATTANOOGA, TENNESSEE.
CHATTANOOGA SAW WORKS.
MANUFACTURERS OF
SUPERIOR SAWS.
MOULDING KNIVES OF EVERY DESCRIPTION.
ESPECIAL ATTENTION
GIVEN TO THE REPAIRING OF ALL KINDS OF SAWS.

THE STANDARD TOOL COMPANY, Cleveland, Ohio.

Manufacturers of Bit Stock Drills, Straight Shank Drills, Taper Shank Drills
Taper Reamers, Milling Cutters, Chucks, Ratchet Drills, Screw-Driver
Bits, Twist Drill Grinding Machines.

National Hardware and Malleable Iron Works.
Tackle Blocks, Oar Locks-Cleats, Thimbles and Awning Fittings
MADE OF THE BEST MALLEABLE IRON GALVANIZED.
MALLEABLE, SOFT GREY IRON and STEEL CASTINGS to order.
ALL KINDS OF FITTING AND FINISHING.
THOS. DEVILIN & CO., Lehigh Ave. and Third St., Phila., Pa.

CENTRIFUGAL
ROTARY AND PISTON
PUMPS.

PUMPS

Also HOUSE PUMPS.

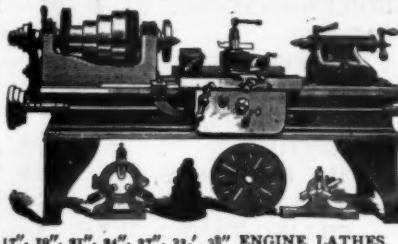
RUMSEY & CO., Limited,
Seneca Falls, N. Y., U. S. A.

FIRE ENGINES,
HOOK AND LADDER
TRUCKS
And HOSE CARTS.

Send for Catalogue.

Shapers, Engine Lathes AND Drills.
THE LODGE & DAVIS MACHINE TOOL CO.

CINCINNATI, O.
New York, 115 Liberty Street. Boston, 21 and 25 Purchase
St. Chicago, 68 and 70 S. Canal St. Philadelphia, 19 N. 7th St.
WRITE FOR PRICES. IT WILL PAY YOU.



17", 19", 21", 24", 27", 32", 38" ENGINE LATHES.

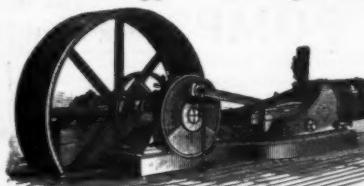
15 & 20-inch
CRANK.
so-36-32 inch
GEARED
SHAPERS.



UPRIGHT DRILL.

New Tangye Buckeye Automatic Cut-Off Engines

25 TO 1,000 H. P.

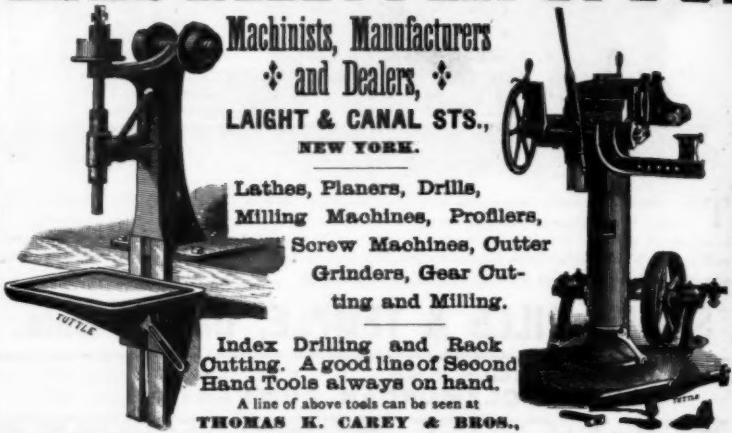


IN USE, OVER 2,500.

SALE AGENTS—Phil & Wiggs Machinery
Birmingham, Ala.; Jas. P. Creighton, Louis-
ville, Ky.; N. W. Robinson, 154 Washington Street, Chicago, Ill.

Buckeye Engine Co., Salem, Ohio.

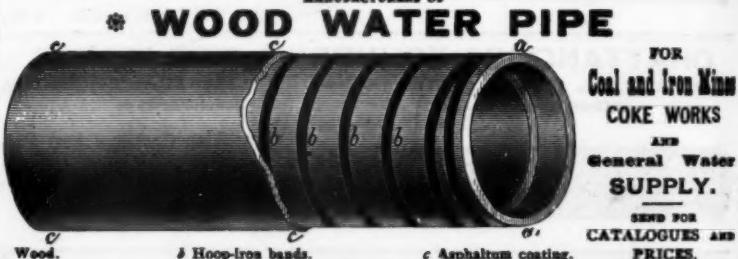
E. E. GARVIN & CO.



Index Drilling and Rack
Cutting. A good line of Second
Hand Tools always on hand.
A line of above tools can be seen at
THOMAS H. CAREY & BROS.,
56 Light St., Baltimore Agents.

SMALL GEAR CUTTER.

A. WYCKOFF & SON, ELMIRA, N. Y.



FOR
Coal and Iron Minn
COKE WORKS
AND
General Water
SUPPLY.
SEND FOR
CATALOGUE AND
PRICES.

SOLID EMERY OIL STONE **SOLID EMERY**
AND **OIL STONES**
TRIPLE COATED Triple Coated
WHOLESALE ONLY BY **KNIFE SHARPENER**
THE TANITE CO. STROUDSBURG, PA.



Buffalo Forges

BLOWERS & EXHAUSTERS.
HEATING FURNACES, HAND BLOWERS.
AND BLACKSMITH DRILLS.

BUFFALO FORGE CO.
BUFFALO, N.Y.

BEFORE PURCHASING ELSEWHERE WRITE US FOR CATALOGUE AND PRICES UPON

Drag Scrapers, Wheel Scrapers, Grading Plows, Dump Carts,
Steel Sinks, Wheelbarrows of all kinds.

The Kilbourne & Jacobs Manfg. Co., Columbus, Ohio, U. S. A.